VOLUME VI MARCH, 1913 NO. 3

Southern Medical Journal

Journal of The Southern Medical Association

THE TRUTH AND THE TRUTH ONLY ON EVERY PAGE FROM COVER TO COVER

ORIGINAL ARTICLES

Compelling Health—A study of Attitude. Robert S. Carroll, Asheville, N. C. 147

Symptoms and Clinical Diagnosis of Bubonic Plague. J. Birney Guthrie, New Orleans, La. .. 155

The Diagnosis of Plague. R. L. Wilson, Charleston, S. C. 157

The Prophylaxis of Plague. J. E. Beck, Mobile, Ala. 161

Toxemias from Alcohol. T. D. Crothers, Hartford, Conn. 165

Pediatrics. William Weston, Columbia, S. C. 167

Sclerema Adiposum, with Report of Case. J. Ross Snyder, Birmingham, Ala. 169

Malarial Hemoglobinuria, Report of Case. Albert Hand, Shubuta, Miss. 171

Review of 131 Cases of Pellagra. B. E. M. Green, Milledgeville, Ga. 171

Some Observations on Acute Pancreatitis. Stephen H. Watts, Charlottesville, Va. 174

Some Modern Factors of Safety in Surgery. J. Shelton Horsley, Richmond, Va. 181

The Identity of Cause of Aseptic Wound Fever and Post-Operative Hyperthyroidism and Their Prevention. George W. Crile, Cleveland, O. 185

The Management of Fractures of the Elbow. Isidore Cohn, New Orleans, La. 186

Nail Occluding Third Bronchial Ramus: Upper Bronchoscopy, Recovery. J. W. Jervey, Greenville, S. C. 191

Treatment of Chronic Laryngeal Stenosis by Special Devised Intubation Tube. Homer Dupuy, New Orleans, La. 194

Cause, Prevention and Cure of Deafmutism. Maury M. Stapler, Macon, Ga. 195

The Surgical Treatment of Infections of the Peritoneum, with Special Reference to the Immediate Sterilization of Same. Joseph A. Crisler and Eugene J. Johnson, Memphis, Tenn. 200

Editorials 206

Southern Medical News 213

Therapeutics 214

Correspondence 205

Book Reviews 216

"Chicago Laboratory, 8 N. State St., Chicago, Ill., see Page 23."

OUT MARCH 15th

The New Keen's Surgery

With the publication of a sixth volume, your *Keen's Surgery* is brought right down to the minute. You get all the advantages of a complete and exhaustive revision at but one-fifth the cost. It makes *Keen's Surgery* the best surgery on the market.

Each man has searched for the new, the practical, the *really useful* in his special field, and he gives it to you here. Here you get everything new in general surgery and all its specialties, fully illustrated and authoritatively presented. If you want the very newest surgery, you must turn to the new "Keen" for it.

Six octavos of 1050 pages, with 3100 illustrations, many in colors. Edited by W. W. KEEN, M.D., LL.D., Hon. F.R.C.S. (Eng. and Edin). Per volume: Cloth, $7.00 net; Half Morocco, $8.00 net.

Send for a circular telling you all about it

W. B. SAUNDERS COMPANY **Philadelphia and London**

The City View Sanitarium

SEPARATE BUILDINGS FOR MEN AND WOMEN. NASHVILLE, TENN.

A licensed ethical private institution for the treatment of Mental and Nervous Diseases, and a selected class of Alcoholic and Drug addictions. Commodious, well arranged, and thoroughly equipped buildings. Women's department just completed, fireproof throughout. Home-like surroundings a special feature. Specially trained nurses. Two resident physicians. Capacity 50.

Consultants—Dr. Duncan Eve, Dr. Wm. G. Ewing, Dr. J. A. Witherspoon, Dr. Paul F. Eve, Dr. S. S. Crockett, Dr. L. B. Graddy, Dr. W. W. Core.

JOHN W. STEVENS, M.D., Physician-in-Charge.

'Phone Main 2928 NASHVILLE, TENN. Rural Route No. 1

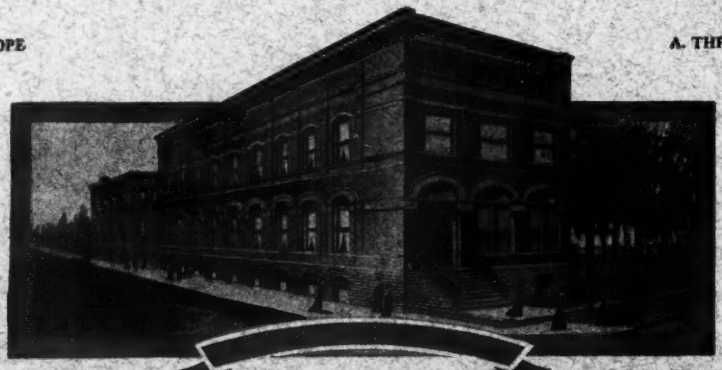
THE TORBETT SANATORIUM

Majestic Hotel and Bath House

Brick buildings. Ninety rooms with modern appointments. Full staff of Physicians and Nurses. Equipped with everything recognized beneficial in the diagnosis and treatment of chronic diseases—especially rheumatism, catarrhal, stomach and nervous troubles. Water similar in composition and temperature to Carlsbad. The land of sunshine. Write for folder.

J. W. TORBETT, B. S., M. D., Superintendent, Marlin, Texas

CURRAN POPE A. THRUSTON POPE



A MODERN up-to-date private infirmary equipped with steam heat, electric light, electric fans, modern plumbing and new furnishings. Solicits all chronic cases, functional and organic nervous diseases, diseases of the stomach and intestines, rheumatism, gout and uric acid troubles, drug habits and non-surgical diseases of men and women. No insanity or infectious cases treated. Bed-ridden cases not received without previous arrangement.

Hydrotherapy, Mechanical Massage, Static, Galvanic, Faradic, High Frequency, Arc Light and X-Ray Treatments given by competent Physicians and Nurses under the immediate supervision of the Medical Superintendent. Special laboratory facilities for diagnosis by urine, blood, sputum, gastric juice and X-Ray. Recreation hall with pool and billiards for free use of patients.

Rates $25 per week; including treatment, board, medical attention and general nursing. Send for large illustrated catalog. The Sanatorium is supplied daily, from the Pope Farm, with vegetables, poultry and eggs; also milk, cream, butter and buttermilk from its herd of registered Jerseys.

THE POPE SANATORIUM

INCORPORATED
Established 1899

Long Distance Phones
CUMB. M. 2122 HOME 2122

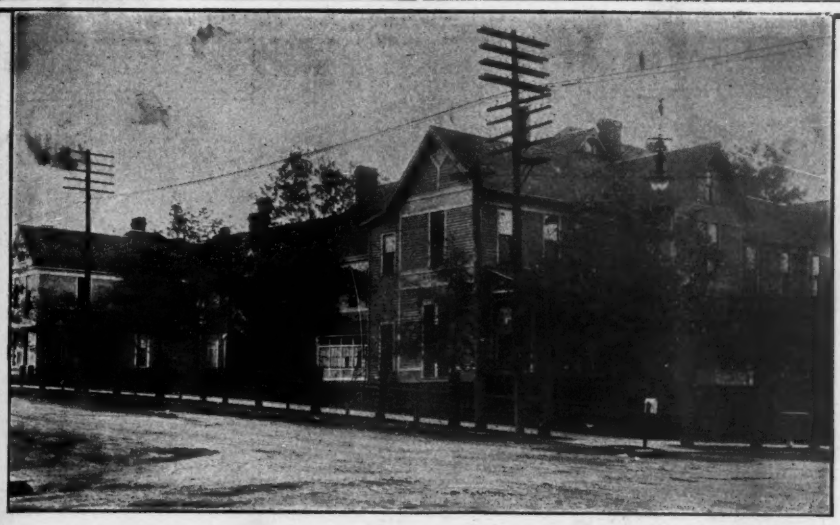
115 West Chestnut Street
LOUISVILLE, KENTUCKY

n

. 1

urses
ases—
tem-

POPE



DAVIS INFIRMARY For Diseases of Women and Surgical Cases and Hospital Training School for Nurses

The buildings are well constructed for surgical work. Competent Staff of Consultants and Assistants—Neurologist, Internist, Opthalmologist, Cystescopist, Radiologist, Pathologist.

J. D. S. DAVIS, M.D., Birmingham, Alabama.

CONSULTING BOARD

Lewellys F. Barker, M.D.
Sanger Brown, M.D.
Archibald Church, M.D.
Julius Grinker, M.D.
Hugh T. Patrick, M.D.
William G. Stearns, M.D.

Oak Leigh

A Private Educational Sanitarium

AT LAKE GENEVA, WISCONSIN

DR. MARY E. POGUE
Physician in charge
Oak Leigh, Lake Geneva, Wis.
Long Distance Telephone
262 Lake Geneva
Chicago Office:
108 North State Street
Wednesdays and Saturdays
by appointment
Telephone Central 4900

FOR NERVOUS AND MENTAL DISEASES IN CHILDREN AND ADOLESCENTS

EDUCATIONAL EQUIPMENT

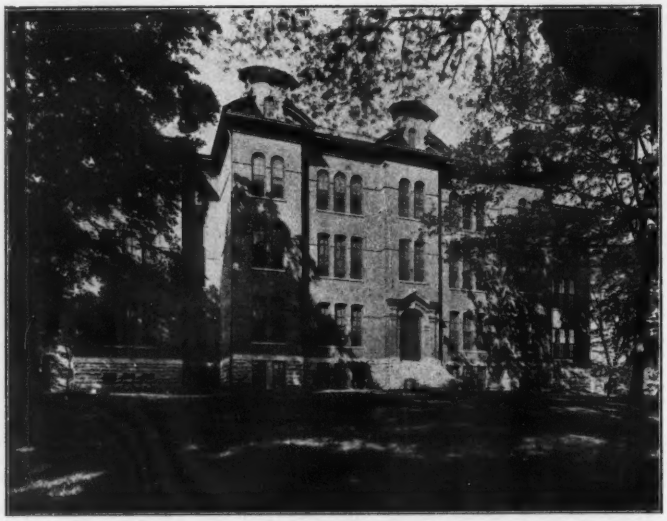
MOTOR AND SENSORY TRAINING KINDERGARTEN ARTICULATION
SPEECH DEFECTS CORRECTIVE GYMNASTICS MANUAL TRAINING RAFFIA
SEWING MODELING IN CLAY BRASS WORK NATURE STUDY
DOMESTIC SCIENCE MUSIC READING WRITING ARITHMETIC SPELLING
GEOGRAPHY COMPOSITION AMERICAN AND ENGLISH HISTORY PHYSIOLOGY
GRAMMAR LITERATURE ALGEBRA CIVICS LATIN GERMAN

Trained Teachers and Trained Nurses

Please mention The Southern Medical Journal when you write to advertisers.

BEECHHURST SANITARIUM

LOUISVILLE, KENTUCKY



A thoroughly modern and well equipped psychopthis hospital for the treatment of mild nervous and mental diseases, drug addictions and alcoholism. Ample buildings. Detached apartments for special cases. Twenty-five acres of wooded lawn. High and retired.

E. P. THOMAS,
s. Mgr.

H. B. SCOTT, A.M.M.D.,
Med. Supt.

Long Distance Phones:
Cumberland, E 257a
Home, 3555

ST. LUKE'S HOSPITAL

Open the Entire Year

RICHMOND -:- VIRGINIA

Owned and personally conducted by Dr. Stuart McGuire for the use of his private patients.

Recent additions and alterations make it one of the largest and most complete private Sanatoria in the country.

Single and double bed-rooms with or without baths. No wards.

New Sun Parlor and Roof Garden.

Rates from $2.00 per day up.

STUART McGUIRE, M.D., Surgeon in Charge W. Lowndes Peple, M.D., Associate Surgeon

THE CINCINNATI SANITARIUM

A PRIVATE HOSPITAL

For mental and nervous disorders.
Situation retired and accessible.
Methods ethical and modern.
For detailed information apply for Annual Report.

Dr. F. W. Langdon, Medical Director.
Dr. B. A. Williams, Resident Physician.
Dr. C. B. Rogers, Resident Physician.
H. P. Collins, Business Manager.

Address College Hill, Cincinnati, Ohio

KENILWORTH SANITARIUM

KENILWORTH, ILLINOIS
C. & N. W. Ry. Six miles north of Chicago.

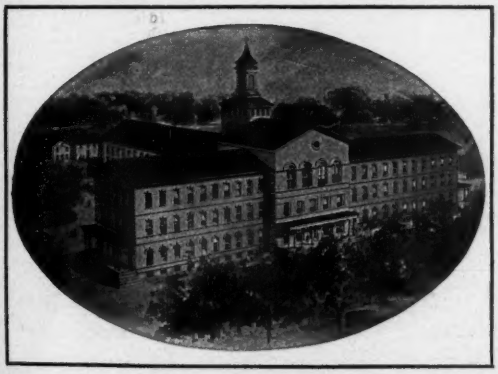
(Established 1905)

Built and equipped for the treatment of nervous and mental diseases. Approved diagnostic and therapeutic methods. Special system of ventilation. Rooms impervious to noise. Elegant appointments. Bath rooms en suite, steam heating, electric lighting, electric elevator.

Resident Medical Staff: Kathryn T. Driscoll, M.D., Assistant Physician; Sherman Brown, M.D., Medical Superintendent.

SANGER BROWN, Chief of Staff

59 E. Madison Street, Chicago, Illinois.
Hours 11 to 1. Telephone Randolph 5794.



OXFORD RETREAT

OXFORD, OHIO

Nervous and Mental Diseases
Alcohol and Drug Addictions

FOR MEN AND WOMEN

96 Acres Lawn and Forest. Buildings Modern and First-Class in all Appointments. Thoroughly Equipped. Of Easy Access—39 Miles from Cincinnati, on C. H. & D. R. R. 10 Trains Daily.

THE PINES

An Annex for Nervous Women

Write for Descriptive Circular

R. HARVEY COOK, M. D., Physician-in-Chief

Biloxi Sanatorium and Health Resort

ON THE BEACH OF THE GULF OF MEXICO

The most ideally located institution in the entire country. Seventeen acres of lawn and park. Own Artesian water. All rooms open outdoors. Screened throughout. Steam heat. Electric bells. Convalescent or nerve tired people can find no more satisfactory place in which to get well. Climate unsurpassed for insomnia.

H. M. FOLKES, M.D., CONSULTANT. **ROSCOE L. WHITE, M.D., SUPT.**

BEECHHURST SANITARIUM

LOUISVILLE, KENTUCKY

A thoroughly modern and well equipped psychopthis hospital for the treatment of mild nervous and mental diseases, drug addictions and alcoholism. Ample buildings. Detached apartments for special cases. Twenty-five acres of wooded lawn. High and retired.

E. P. THOMAS,
s. Mgr.

H. B. SCOTT, A.M.M.D.,
Med. Supt.

Long Distance Phones:
Cumberland, E 257a
Home, 3555

ST. LUKE'S HOSPITAL

Open the Entire Year

RICHMOND -:- VIRGINIA

Owned and personally conducted by Dr. Stuart McGuire for the use of his private patients.

Recent additions and alterations make it one of the largest and most complete private Sanatoria in the country.

Single and double bed-rooms with or without baths. No wards.

New Sun Parlor and Roof Garden.

Rates from $2.00 per day up.

STUART McGUIRE, M.D., Surgeon in Charge W. Lowndes Peple, M.D., Associate Surgeon

THE CINCINNATI SANITARIUM

A PRIVATE HOSPITAL

For mental and nervous disorders.
Situation retired and accessible.
Methods ethical and modern.
For detailed information apply for Annual Report.

Dr. F. W. Langdon, Medical Director.
Dr. B. A. Williams, Resident Physician.
Dr. C. B. Rogers, Resident Physician.
H. P. Collins, Business Manager.

Address College Hill, Cincinnati, Ohio

KENILWORTH SANITARIUM

KENILWORTH, ILLINOIS
C. & N. W. Ry. Six miles north of Chicago.

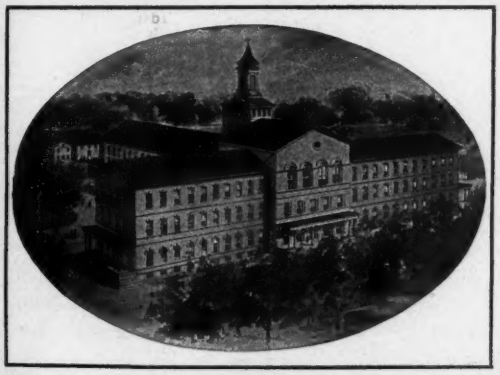
Built and equipped for the treatment of nervous and mental diseases. Approved diagnostic and therapeutic methods. Special system of ventilation. Rooms impervious to noise. Elegant appointments. Bath rooms en suite, steam heating, electric lighting, electric elevator.

Resident Medical Staff: Kathryn T. Driscoll, M.D., Assistant Physician; Sherman Brown, M.D., Medical Superintendent.

SANGER BROWN, Chief of Staff

59 E. Madison Street, Chicago, Illinois.
Hours 11 to 1. Telephone Randolph 5794.

(Established 1905)



OXFORD RETREAT

OXFORD, OHIO

Nervous and Mental Diseases
Alcohol and Drug Addictions

FOR MEN AND WOMEN

96 Acres Lawn and Forest. Buildings Modern and First-Class in all Appointments. Thoroughly Equipped. Of Easy Access—39 Miles from Cincinnati, on C. H. & D. R. R. 10 Trains Daily.

THE PINES

An Annex for Nervous Women

Write for Descriptive Circular

R. HARVEY COOK, M. D., Physician-in-Chief

Biloxi Sanatorium and Health Resort

ON THE BEACH OF THE GULF OF MEXICO

The most ideally located institution in the entire country. Seventeen acres of lawn and park. Own Artesian water. All rooms open outdoors. Screened throughout. Steam heat. Electric bells. Convalescent or nerve tired people can find no more satisfactory place in which to get well. Climate unsurpassed for insomnia.

H. M. FOLKES, M.D., CONSULTANT. **ROSCOE L. WHITE, M.D., SUPT.**

The Grandview Sanitarium

PRICE HILL {Glenway Avenue} CINCINNATI.

For Mental and Nervous Diseases
ALCOHOLISM and DRUG HABIT

Especial Attention is Called to Our Plan of INDIVIDUAL CARE AND TREATMENT

No ward service. Plenty of Nurses. Location ideal—high and beautiful. Large tract of wood and lawn. Retired, quiet and accessible. Grand views and perfect sanitation.

REFERENCES: The Medical Profession of Cincinnati.

Direct R. R. connections without change of cars, New Orleans, Mobile, Pensacola, South Florida. Mobile & Ohio, Louisville & Nashville, Queen & Crescent, Illinois Central.

BROOKS F. BEEBE, M.D., Resident Medical Supt.

Office: 414 Walnut Street, Cincinnati, Ohio

THE POTTENGER SANATORIUM
MONROVIA, CALIFORNIA

FOR DISEASES OF THE LUNGS AND THROAT.

A thoroughly equipped institution for the scientific treatment of tuberculosis. High class accommodations. Ideal all-year-round climate. Surrounded by orange groves and beautiful mountain scenery, Forty-five minutes from Los Angeles. F. M. Pottenger, A.M., M.D., LL.D., Medical Director. J. E. Pottenger, A.B., M.D., Assistant Medical Director and Chief of Laboratory. For particulars address:

POTTENGER SANATORIUM, Monrovia, Cal.

Los Angeles office: 1100-1101 Title Ins. Bldg., Fifth and Spring Streets.

OCONOMOWOC HEALTH RESORT
OCONOMOWOC WISCONSIN

FOR NERVOUS AND MILD MENTAL DISEASES AND ADDICTION CASES

New Building Absolutely Fireproof

Five minutes walk from interurban between Oconomowoc and Milwaukee

On main line C. M. & St. Paul Railway, 30 miles west of Milwaukee.

Built and equipped to supply the demand of the neurasthenic, border-line and undisturbed mental case, for a high class home free from Contact with the palpably insane, and devoid of the institutional atmosphere.

Forty-one acres of natural park in the heart of the famous Wisconsin Lake Resort region. Rural environment, yet readily accessible. A beautiful country in which to convalesce.

The new building has been designed to encompass every requirement of modern sanitarium construction, the comfort and welfare of the patient having been provided for in every respect. The bath department is unusually complete and up-to-date.

Number of patients limited, assuring the personal attention of the resident physician in charge.

ARTHUR W. ROGERS, B.L., M.D., Resident Physician in Charge

Please mention The Southern Medical Journal when you write to advertisers.

For Seekers After Health and Rest

Situated Amid Delightful and Picturesque Scenery

A Real Health Resort for Those who are Sick, and a Real Rest Resort for Those who are Tired Out

Large, modern, fire-proof main building, equipped with every appliance for sanitation, comfort and treatment. Cuisine the best—Rates moderate. Up-to-date Therapeutics.

8 Hours from New York. 10 Hours from Philadelphia. 2 Hours from Buffalo by Lackawanna R.R. 1¾ Hours from Rochester by Erie.

The Jackson Health Resort

SEND FOR LITERATURE **DANSVILLE, NEW YORK**

LYNNHURST SANITARIUM

MEMPHIS, TENNESSEE

A Private Sanitarium for Nervous Diseases, Mild Mental Disorders and Drug Addictions

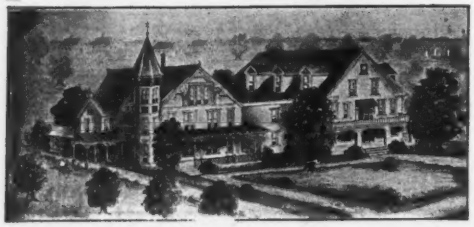
A Rest Home for Nervous Invalids and Convalescents requiring environments differing from home surroundings. Modern and approved methods for giving Hydrotherapy, Electrotherapy, Massage and Rest Treatment. An improved treatment for Opium-Morphin addictions, which eliminates withdrawal pains and suffering. Experienced nurses. Mild climate. Artesian chalybeate and soft waters.

S. T. RUCKER, M. D., Medical Supt., Memphis, Tenn.

Please mention The Southern Medical Journal when you write to advertisers.

DRS. PETTEY & WALLACE'S SANITARIUM

958 S. Fifth Street MEMPHIS, TENN.



FOR THE TREATMENT OF

Alcohol and Drug Addictions
Nervous and Mental Diseases

A quiet home-like, private, high-class, institution. Licensed. Strictly ethical. Complete equipment. New building. Best accommodations.

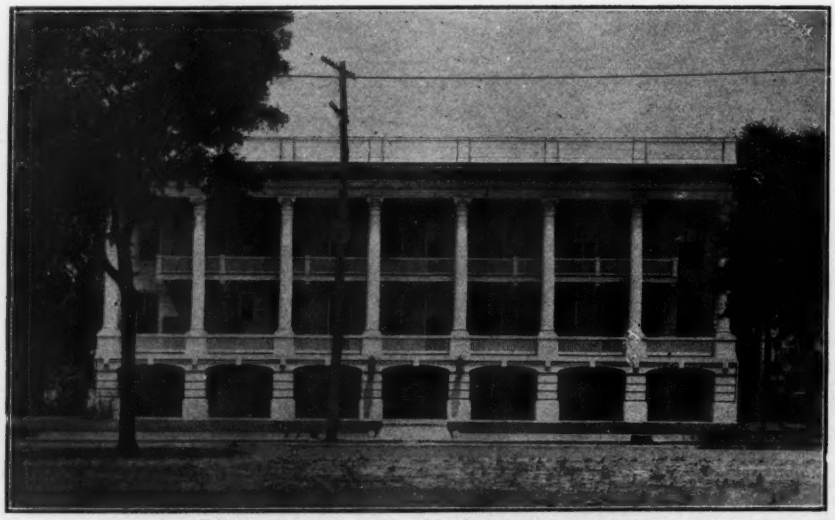
Resident physician and trained nurses.

Drug patients treated by Dr. Pettey's original method under his personal care.

THE HEIGHTS SANITARIUM, Inc., Houston, Texas

For Mental and Nervous Diseases, Drug and Alcohol Addictions
Pasteur Institute for Prevention of Hydrophobia in Separate Department
Ideal Location, First-class Appointments, Thorough Equipment

R. E. Cloud, M.D., Supt. and Resident Physician. (For several years Asst. Physician to San Antonio and Terrell Asylums.) John T. Moore, A.M., M.D., Consulting Surgeon. M. A. Wood, M.D., Houston Clinical Laboratory, in charge of Pasteur Institute.



INGE-BONDURANT SANATORIUM, Mobile, Ala.

A modern private hospital for the treatment of general medical and surgical cases, nervous and mental diseases, inebriety and drug addiction. **BUILDING**—Recently enlarged and completely renovated and refurnished. Steam heat, electric elevator, rooms with private bath. Accommodations for 40 people. **EQUIPMENT**—New surgical operating room, tile floored and completely equipped for surgical and gynecological work. Electric operating room, with galvanic and faradic wall plate, therapeutic lamp, vibrator, X-ray apparatus, etc. Therapeutic bath room with all needed apparatus for shower, needle, douch, sitz and general bath, electric baths, etc. Microscopical and pathological laboratory in charge of Dr. E. S. Sledge. All secretions are thoroughly examined when patients admitted. Training School for Nurses offers a two-years' course of instruction in general nursing. Address Dr. H. T. INGE, General Medicine and Surgery, or Dr. E. D. Bondurant, Nervous and Mental Diseases, Inebriety and Drug Addiction.

Please mention The Southern Medical Journal when you write to advertisers.

THE HYGEIA HOSPITAL AND SANATORIUM 101 West Grace Street

FOR ACUTE AND CHRONIC MEDICAL PATIENTS,

EXCEPT CASES OF DRUG ADDICTION AND INSANITY.

REST-A-BIT SUBURBAN ANNEX Opposite Country Club

For Convalescent Patients During the Summer.

RICHMOND, VIRGINIA

Increased Capacity with all Modern Facilities, including, in addition to the usual equipment, a complete system of Therapeutic Baths, together with all forms of Electricity, Vibration, Massage by Experts X-Ray, etc.

The Clinical Laboratory is also supplied with the most approved apparatus for all kinds of diagnostic work.

Training School for Nurses, in which, besides the regular courses special practical work is given by Specialists in Dietetics, Massage, Hydrotherapy and Electricity.

J. ALLISON HODGES, M. D. ....Physician-in-Chief
Nervous Diseases and General Medicine.

FRED. M. HODGES, M. D ..... Associate Physician
Internal Medicine and Physical Diagnosis.

WM. H. HIGGINS, M. D. .....Assistant Physician
Internal Medicine and Physical Diagnosis.

WM. B. PORTER, M. D. .....Assistant Physician
Pathologist and Medical Assistant.

B. L. CRAWFORD, M. D..... .....Resident Physician
Assistant Pathologist.

A. E. TURMAN, M. D. .....Obstetrician

Consulting Specialists in Surgery, Gynecology, Eye, Ear, Skin Diseases, Etc.

MISS FLOY L. MARTIN, R. N., Superintendent.
MISS L. I. HOLSTON, R. N., Head Nurse.
MISS BERTHA SHEPARD, Dietitian.
MISS RUBY PRIDDY Secretary.

Rates for Board and Nursing, two dollars per day and upwards, according to room selected by patient. Booklet by request. Open through out the year.

Dr. Board's Sanatorium

OFFICERS AND DIRECTORS

Dr. Milton Board, Pres. and Supt.
(Late Supt. West. Ky. Asylum for the Insane.)
(Late Member of Ky. State Board of Control Charitable Institutions.)
Dr. J. T. Windell, Vice-President.
Dr. Earl Moorman, Secy. and Asst.
Dr. W. E. Gardner, (Supt Central Ky. Asylum.)
Dr. A. T. McCormack
Dr. Leon L. Solomon
Dr. Irvin Abell

TELEPHONES.

Cumberland ...S. 480
Home 5995

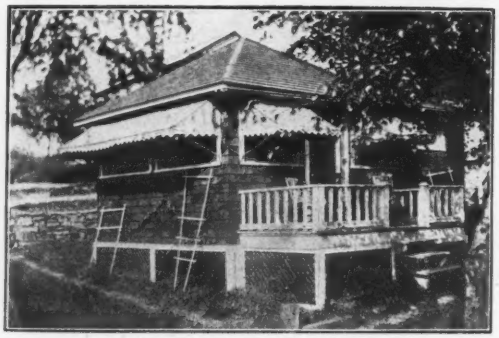
REFERENCE.

The Medical Profession of Kentucky.

A modern, thoroughly equipped private institution for the treatment of *MENTAL AND NERVOUS DISEASES, DRUG ADDICTIONS AND ALCOHOLICS.*

Situated in the heart of the city, convenient and easy of access yet quiet and secluded. Opposite beautiful Central Park. Terms $20.00 to $35.00 per week. Outside patients charged office fees. For further information address

DR. MILTON BOARD, Supt., 1412 Sixth St., Louisville, Ky.



Individual Bungalow With Bath.

Sunnyrest Sanatorium

WHITE HAVEN, PENNA.

For Diseases of Lungs and Throat

Situated in the Blue Mountains (1300 feet elevation) 3 hours from Philadelphia, 4 hours New York and 8 hours from Buffalo.

COTTAGES AND INDIVIDUAL BUNGALOWS

Visiting Physicians: Dr. H. R. M. Landis, Dr. Joseph Walsh, Dr. Chas. J. Hatfield, Dr. F. A. Craig and Dr. George Fetterolf of Philadelphia, and Dr. Alexander Armstrong of White Haven.

BOOKLET

ELWELL STOCKDALE, Supt.

DR. SHORTLE'S ALBUQUERQUE SANATORIUM FOR TUBERCULOSIS

RATES, $20 TO $30 A WEEK. NO EXTRAS.

A private sanatorium where the closest personal attention is given each case, and offering all the advantages of a large institution, with complete laboratory and other modern facilities combined with most of the comforts of home.

Steam heat, hot and cold water, electric lights, call bells, local and long distance telephones, and private porches for each room.

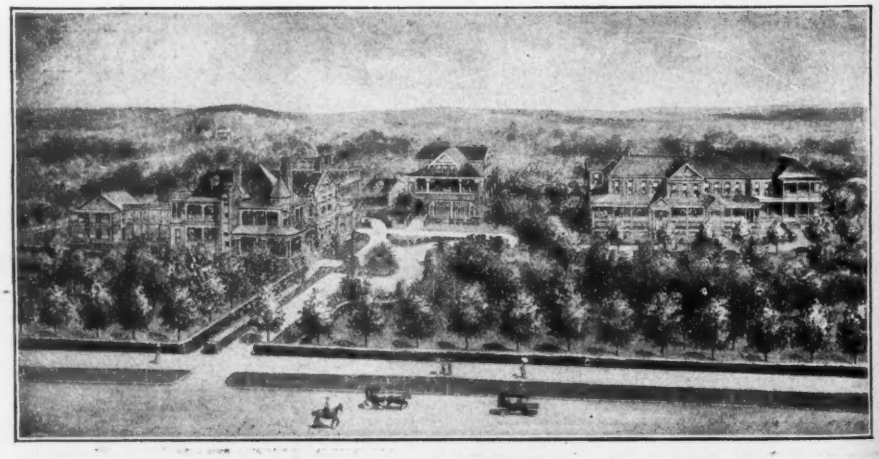
Situated but 1½ miles from ALBUQUERQUE, the largest city and best market of NEW MEXICO, permits of excellent meals and service at a moderate price.

A. G. SHORTLE, M. D., Medical Director. **M. W. AKERS, Superintendent.**

G. H. MOODY, M.D.
Resident Physician

T. L. MOODY, M.D.
Resident Physician

J. A. McINTOSH, M.D.
Resident Physician



DR. MOODY'S SANITARIUM (Six Modern Buildings)

(Incorporated under the Laws of Texas.)

For Nervous Diseases, Selected Cases of Mental Diseases, Drug and Alcohol Addictions

315 Brackenridge Avenue *SAN ANTONIO, TEXAS*

HOWELL PARK SANITARIUM (IN HOWELL PARK) ATLANTA, GA.

For Treatment of Nervous, Mild Mental Diseases, Drug Habits, Alcoholism, and General Invalidism.

HOWELL PARK SANITARIUM IN MID-WINTER.

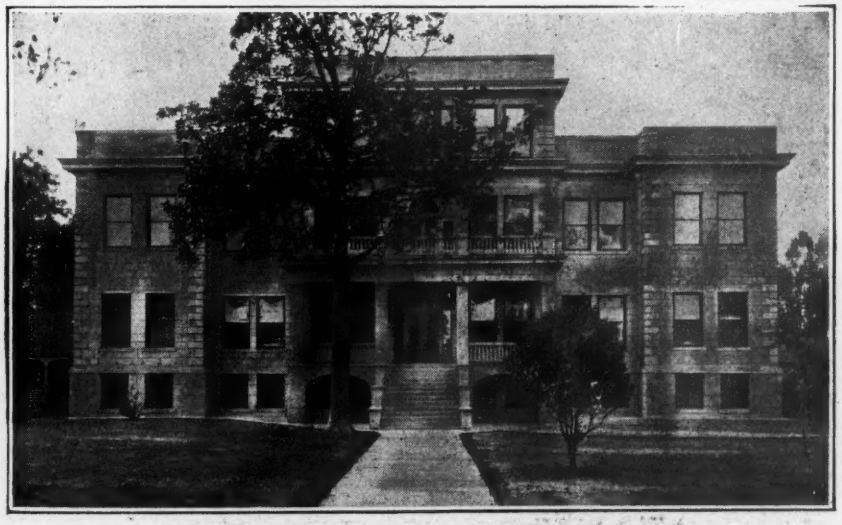
An ethically conducted private sanitarium situated in a beautiful suburb of Atlanta, surrounded by a most luxurious park.

Climate: Atlanta has the finest all-the-year-'round climate of any city in the country. A great resort for health-seekers and tourists—cool in summer, temperate in winter, with an average temperature of 60.8 degrees.

Treatment: Such approved measures as **Hydrotherapy, Phototherapy, Massage, Electro-therapeutics, Rest Cure,** or **medicinal** agents are used. **Each case is individually studies and treated.** The limited number received affords personal attention and surroundings best suited to his or her condition. All the comforts of a private home, excellent cuisine, and every room silently preaching the gospel of sunshine.

Terms: Examination fee, $10.00, whether patient remains in the institution or not. Rates weekly vary from $25.00 to $60.00, depending upon treatment required and location of room; medical attention, general nursing, board and room included; extra nursing from $10.00 to (special nurse) $25.00 per week. All charges payable one week in advance. **For descriptive booklet and further information address,**

J. CHESTON KING, M. D., Medical Director and Proprietor.



THE SOUTHERN INFIRMARY

MOBILE, ALABAMA.

Pleasantly and conveniently located. Private rooms, modern in their appointments. Steam heated, well ventilated and lighted. Adapted for Surgical, Gynecological and Obstetrical cases. Insane and tubercular patients not admitted. School for Nurses. Rates moderate.

Under control and management of T. H. FRAZER, M.D., and W. R. JACKSON, M.D.

DR. BROUGHTON'S SANITARIUM

For Opium, Morphine, Cocaine and Other Drug Addictions, including Alcohol and Special Nervous Cases

Methods easy, regular, humane. Good heat, light, water help, board, etc. Number limited to 44. A well kept home. Address

DR. BROUGHTON'S SANITARIUM
Phone 536 2007 S. Main St. Rockford, Ill.

Dr. Barnes' Sanitarium = = Stamford, Conn.

For Mental and Nervous Diseases and General Invalidism

Splendid location overlooking Long Island Sound and City. Facilities for care and treatment unsurpassed. Separate department for cases of inebriety. 50 minutes from New York City. For terms and informatiton apply to

F. H. BARNES, M. D., Stamford, Conn. Long Distance Telephone 1867

RIVER CREST SANITARIUM

FOR NERVOUS AND MENTAL DISEASES, INCLUDING COMMITTED A D VOLUNTARY PATIENTS, ALCOHOLIC AND NARCOTIC HABITUES

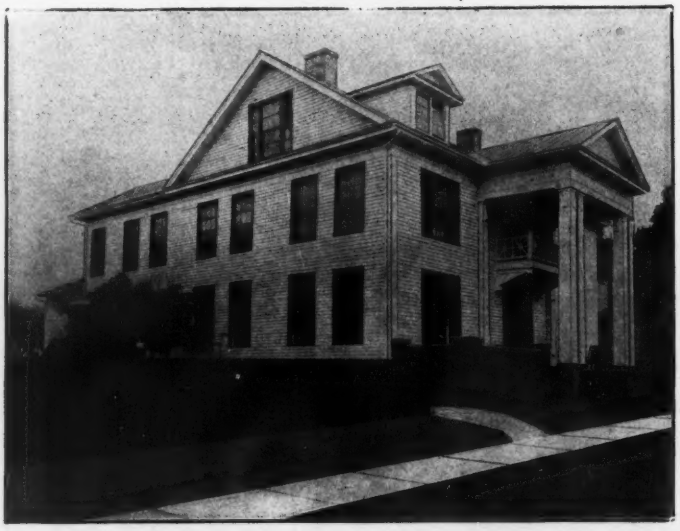
Sanitarium Phone 820 Astoria ASTORIA, Long Island, NEW YORK CITY (Under State License)

For Nervous and Mental Diseases, including committed and voluntary patients, Alcoholic and Narcotic Habitues.

A home-like private retreat, situated in a large park, Astoria, Long Island, opposite 108th Street, New York City. Accessible by carriage and trolley. Hydrotherapy, Electricity, Vibrassage, Massage. Golf Links, Tennis, Bowling, Billiards. Full equipment. Separate building for Drug and Alcoholic cases. Villas for special cases, including suites, tiled bath rooms, sun parlors, etc. Our own supply of pure water from deep wells, electric light, ice plant, etc. Eight buildings for thorough classification of patients—steam heat, etc. Arts and Crafts. Amusements. Rates moderate.

WM. ELLIOTT DOLD, M.D., Physician in Charge
NEW YORK OFFICE: Sydenham Building, 616 Madison Avenue, Corner 59th Street. Hours: 3 to 4.

DR. CORBETT'S SANITARIUM Greenville, S. C.



An institution for the care of selected cases of nervous diseases and addictions to drug and alcohol.

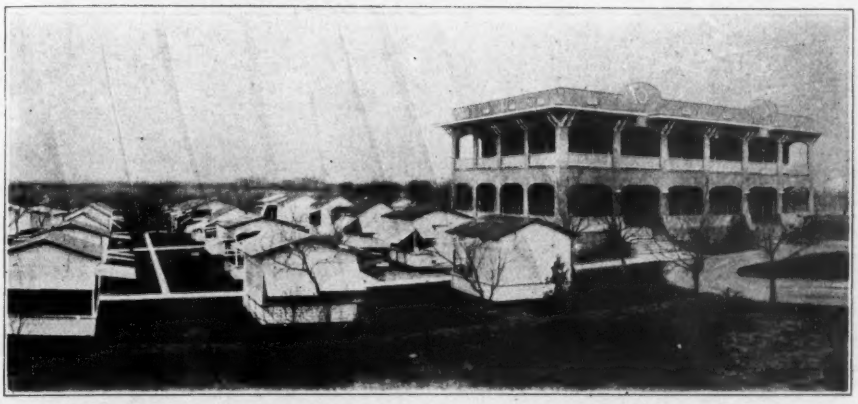
No mental cases accepted.

Treatment is individualized to suit requirements of each patient. Drug habit treated by gradual withdrawal. Minimum discomfort.

Building quietly located, conveniently arranged, and heated by steam. Atmosphere homelike, cheerful and bright; rooms airy and clean; table as good as the market affords.

Address DR. L. G. CORBETT, Greenville, South Carolina.

SAN ANTONIO TENT COLONY FOR DISEASES OF THE LUNGS AND THROAT



Special facilities for treating **Pulmonary and Laryngeal Tuberculosis** in all stages. Individual tent cottages and rooms in new, modern building with sleeping porches. Tuberculin and bacterins administered in all suitable cases. Ideal all-year-round climate, with mild winters, and pleasant summers. Free from dust or sand storms. High-class accommodations. Moderate rates. Medical director lives in the institution and gives each patient individual attention and constant supervision. For information address,

DR. W. C. FARMER, Medical Director, San Antonio, Texas

NEW MEXICO COTTAGE SANATORIUM, Silver City, New Mexico

FOR THE TREATMENT OF TUBERCULOSIS

Physician-in-Chief,
E. S. BULLOCK, M.D.

Associate Physician,
L. S. PETERS, M.D.

Manager,
WAYNE MacV. WILSON

Winter Climate Ideal

Beautiful situation in the mountains of southern New Mexico. Climatic conditions wonderfully perfect. Cool summers. Moderate winters. A flood of sunshine at all seasons. Food excellent and abundant. All the milk our patients can consume from our own dairy of selected cows. Moderate charge. Institution partly endowed. Separate cottages for patients. Complete hospital building for febrile cases. Separate amusement pavilions for men and women. Physicians in constant attendance. Livery for use of patients. Well equipped laboratory, treatment rooms, etc. All forms of tuberculosis received. Special attention to laryngeal tuberculosis. Tuberculin administered in suitable cases. One of the largest and best equipped institutions for tuberculosis in America. Patients received only through physicians.

WRITE TO THE MANAGER FOR DESCRIPTIVE BOOKLET

Please mention The Southern Medical Journal when you write to advertisers.

THE ANNEX
BATTLE CREEK SANITARIUM

The Battle Creek Sanitarium

DINING ROOM IN THE ANNEX

is prepared to deal with all classes of chronic ailments, especially cases of gastric and hepatic disorders. Cases of chronic cardiac and renal disease, arteriosclerosis, neurasthenia, locomotor ataxia, chronic constipation, genito-urinary diseases in both men and women. Not all cases are curable, of course, but most excellent results are often obtained in cases which are quite incurable, without all the special advantages afforded by a thoroughly equipped Sanitarium and Hospital.

Our accommodations have been increased by the addition of the Annex which enables us to accommodate three hundred additional guests.

A copy of our 171 page booklet will be mailed free on receipt of the attached coupon.

THE SANITARIUM
Box 348 BATTLE CREEK
MICHIGAN

BATTLE
CREEK
SANITARIUM
BOX 348
Battle Creek, Michigan

Gentlemen:
Enclosed is my card. Please send me your Book entitled The Battle Creek Sanitarium Book.

The Southern Medical Association Special Trains to the Minneapolis Meeting of the AMERICAN MEDICAL ASSOCIATION

The Secretary of the Southern Medical Association has received a number of requests to arrange for one or more special trains for Southern physicians who will attend the Minneapolis meeting of the American Medical Association. The matter was referred to the Councillors, who have authorized the Secretary to arrange for one or more special trains as may be needed.

Physicians expecting to attend the next meeting of the American Medical Association, and who desire to go on these trains, will please write the Secretary, Dr. Seale Harris, 905 Van Antwerp Building, Mobile, Alabama, giving route preferred and other suggestions as to the arrangements for the Southern Medical Association Specials.

THE NEXT MEETING OF THE

American Medical Association

To be held at Minneapolis, in June, 1913, can be best reached from the Southern States via the

Louisville & Nashville Railroad

THE GREAT TRUNK LINE OF THE SOUTH.

Two through trains each day on fast schedules, with all that is modern and up-to-date in equipment.

L&N

W. A. RUSSELL,
Passenger Traffic Manager

R. D. PUSEY,
General Passenger Agent

LOUISVILLE, KY.

Library of Southern Literature

A work of 15 volumes—over 7,000 pages—authoritative—all-embracing and complete—covering a period of over three hundred years, and compiled at the University of Virginia by eminent Southern men of letters.

What Southern Literature Means

The literature of the South embraces in its chronicles: The age of chivalry and romance in the South (our country's only real aristocratic regime), its tender and appealing dialect, a record of the most beautiful relation that ever existed between master and servant, its patriarchal form and spirit of local government and social intercourse with all its courtly graces, its great constructive statesmen, orators, law-givers and authors, its history and tradition.

A literature that tells of the wonderful industrial evolution of thirty million people, including ten millions of Afro-Americans; and of how the only pure Anglo-Saxon inhabitants of the Appalachian Mountains, long neglected and forgotten, are standing at the door of hope, peering eagerly out into the great fields of opportunity.

It also includes the literature of the present time, when the flowering manhood of the New South, girded with all the accoutrements of modern civilization, are engaged in a mighty battle for peace and progress that compels the attention and admiration of the world.

Measure of Value---Easy Terms

The value of a work of this character cannot be estimated in dollars and cents, yet the price is within the reach of all, and terms of payment are easy. This epochal publication will prove a treasure of greater use and interest than any other work in the home.

TEAR OUT TO-DAY AND MAIL

THE MARTIN & HOYT CO., Atlanta, Ga.:
Please mail me pamphlet and particulars of
The Library of Southern Literature.

Name .....

Street .....

City .....State .....

SEVENTH EDITION A MANUAL OF THOROUGHLY REVISED

CLINICAL DIAGNOSIS

BY MEANS OF LABORATORY METHODS.

By CHARLES E. SIMON, M.D.

Professor of Clinical Pathology in the College of Physicians and Surgeons, Baltimore.

Octavo, 780 pages, with 168 engravings and 25 plates. Cloth, $5.00 net.

This standard work is now divided into two main parts, the first giving all the modern approved laboratory diagnostic methods, the second, or clinical part, which is entirely new, exhibiting under headings of the various diseases, alphabetically arranged, those laboratory findings which establish a diagnosis. The completeness and convenience of this plan scarcely need comment. The work carries the student from the beginning of his course in the subject, through the technique of the laboratory, directly to the interpretation of the findings in the determination of disease. Similarly, the practitioner finds grouped under each disease the laboratory findings, constituting its picture, and the methods in the first part of the book for making the necessary tests. In a word, the seventh edition continues all the features which have made Simon's Clinical Diagnosis so popular in its fifteen years, and rounds out its usefulness with a new and unique section, the whole constituting an ideal text-book and work of reference.

THIRD EDITION THE DISEASES OF THOROUGHLY REVISED

INFANCY AND CHILDHOOD

By HENRY KOPLIK, M.D.

Pediatrist to Mount Sinai Hospital; Late Attending Physician to the Good Samaritan Hospital, etc., New York.

Octavo, 944 pages, 204 engravings and 39 plates. Cloth, $5.00 net.

The author has left nothing undone to make this edition representative of the best and latest knowledge. Among the changes of high interest and importance may be mentioned the improvements in diagnosis and treatment of the infections, the latest advances in infant feeding, the management of gastric and nervous diseases, including the new treatment of meningitis, the chapters on cystitis and pyelitis, and the new sections on tuberculosis, idiocy, dwarfism and neurotic conditions. A feature has been made of improved methods of examination and therapy. As young children cannot describe their symptoms, much depends on their expression. Accordingly the highly artistic and life-like drawings for which this work is notable are a practical aid.

PHILADELPHIA 706-8-10 Sansom St. **LEA & FEBIGER** NEW YORK 2 West 45th St.

Send Us Your Orders for Books on

MEDICINE, SURGERY, PHARMACY, NURSING, ETC.

We also take subscriptions for all MEDICAL JOURNALS, both Foreign and Domestic.

SPECIAL RATES TO HOSPITALS AND TRAINING SCHOOLS FOR BOOKS ON NURSING

Send for Catalog ***J. A. MAJORS & CO.*** ***1301 TULANE AVENUE*** ***NEW ORLEANS LOUISIANA*** ***BUY IN the SOUTH***

THE ONLY MEDICAL BOOK STORE IN THE SOUTH

Please mention The Southern Medical Journal when you write to advertisers.

Tulane University of Louisiana Medical Department

Since 1834 this school has occupied a distinct position in the medical education of the United States.

IN the recent report from the Carnegie Foundation Tulane was one of the few colleges which received uniform commendation, and it was classed among the leading medical colleges of the country.

THE students are charged fees which are commensurate with those charged at other institutions, which are smaller than the fees charged at any institution with equal facilities of education.

THE Charity Hospital and the Touro Infirmary annually elect over 20 resident physicians from among the graduates of Tulane and additionally afford clinics and amphitheater teaching for the education of Junior and Senior students.

WITH over a thousand beds at the Charity Hospital and the annual consultation clinic of over thirty thousand, together with the opportunities at the Touro, students are afforded material for the observation of a variety of diseases which is enormous and incalculable in importance.

THE equipment of this department of Tulane represents the investment in a number of buildings erected for the purpose of medical education, and these include laboratories of chemistry, physics, pharmacy, pharmacology, physiology, anatomy, histology, botany, pathology and bacteriology, clinical medicine, surgery, and, in addition, special laboratories of research all of which total an amount which may be estimated at over a million and a half dollars.

Over 100 teachers contribute to the lectures and other periods of study so that every student who comes to the Tulane Medical Department receives the personal encouragement and interest of those who have his education in charge.

Nearly 5,000 graduates from this school have carried its teachings into practise among the people of the South chiefly, but as well to every part of the world.

With each advance in the requirements of medical educaiton, the University of Louisiana has met all conditions, until today Tulane ranks in the first class of medical institutions of learning, with opportunities for clinical instruction which are unsurpassed in the United States and equaled in few other places.

FOR the study of medicine at Tulane the student must come prepared with a preliminary education in the elementary subjects taught in the high school and with one year of added knowledge in the sciences, obtained in a standard college.

DEPARTMENT OF PHARMACY ALSO. Established 1838. Two graded courses of 32 weeks each for degrees of Ph.C. Pure Food and Drug courses offered to students properly qualified. Women admitted to Pharmacy courses on the same terms as men.

For further information address

Dr. Isadore Dyer, Dean,

P. O. Drawer 261, New Orleans, La.

The Medico-Chirurgical College

OF PHILADELPHIA — Department of Medicine

"In the rapidity and vigor of its growth, is probably without a parallel in the history of medical schools."

WHY? Because of its modern and practical method of instruction.

Most advantageously located in the heart of the medical center of America. It has Well-Planned and Well-Equipped Laboratories; its own Large and Modern Hospital; the finest Clinical Amphitheatre Extant; abundant and varied Clinical Material; a Faculty of Renown and High Pedagogic Ability.

Its Curriculum comprises Individual Laboratory and Practical Work by each student; Free Quizzes by members of the teaching staff; Ward-Classes limited in size; Systematic Clinical Conferences; Modified and Modern Seminar Methods; an Optional Five-year Course. The College has also Departments of Dentistry and Pharmacy and Chemistry.

Send for announcements or information to

SENECA EGBERT, M. D., Dean, Seventeenth and Cherry Streets, Philadelphia, Pa.

NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL

SECOND AVENUE AND TWENTIETH STREET, NEW YORK CITY

The recently completed addition to the Medical School Building gives greatly increased facilities for Medical Instruction in all its branches.

The LABORATORIES have been greatly enlarged, and are now fully equipped for teaching Tropical Medicine, Pathology, Chemistry, Vaccine Therapy, etc. Exceptional opportunities for research work.

SPECIAL COURSES to limited classes are given in all branches of Medicine and Surgery.

Courses are continued throughout the year.

For detailed information of the various clinics and special courses, address:

GEORGE GRAY WARD, JR., M.D., Secretary of the Faculty.

CHICAGO POLICLINIC AND HOSPITAL

Special April Course in SURGERY, GYNECOLOGY, OBSTETRICS, DERMATOLOGY, ORTHOPEDICS, GENITO-URINARY and STOMACH DISEASES. Our regular Annual SPECIAL COURSE in the above branches will begin **Monday, April 7, 1913,** and continue for three weeks. The work will be clinical and eminently practical and will be supplemented by representative clinics by members of the faculty in other branches, making it of great value to the practitioner. There will be evening lectures throughout, and Prof. Gronnerud will conduct Special Courses in Operative Surgery and Anatomy. A feature will oe the Practical Courses by Prof. Graham in Bacteriology, covering examinations of Blood, Pus, Sputum, Urine and Gastric contents.

Prof. Williamson will give a comprehensive Course of twelve lectures on Diseases of the Stomach.

For program and full information address

M. L. HARRIS, M.D., Secy., Dept. U, 219-221 W. Chicago Avenue, CHICAGO.

DOWNEY HOSPITAL

A new, modern, up-todate two-story building with roof garden, equipped with steam heat, electric lights, electric signal system and new furnishings. All rooms outside, with or without private bath; hot and cold water in each. Fully equipped sterilizing and operating roms. Patients admitted suffering from Gynecological, Obstetrical, Abdominal and General Surgical conditions. Limited number of medical cases accepted. No contagious, alcoholic or mental cases admitted. Trained graduate nurses and excellent training school. For further information, address **DOWNEY HOSPITAL, Gainesville, Ga.**

DR. BRAWNER'S SANITARIUM — ATLANTA, GEORGIA

(Sanitarium located on Marietta Car Line, near Smyrna. City office, 701-2-3 Grant Building.) Long distance phones.

For Nervous and Mild Mental Diseases and Addictions

A private home-like sanitarium built and equipped for the care and treatment of Nervous and Mild Mental Diseases, General Invalidism and Allied Conditions. The buildings are new and equipped with all modern conveniences—Electric Lights, Steam Heat and Private Baths with Hot and Cold Water.

The grounds consist of eighty (80) acres of beautifully shaded lawns, with Tennis, Croquet, Gardening and other outdoor recreations and diversions.

The Therapeutic methods are thoroughly approved and scientific, including Hydrotherapy, Electrotherapy, Thermotherapy, Massage, etc. Special attention is given to the "Occupation Cure" and specially directed recreations. Expert attention is given to the preparation of a wholesome and palatable diet. For rates, etc., address **DR. JAMES N. BRAWNER,** Physician in Charge, **Atlanta, Ga.**

UNIVERSITY OF ALABAMA
SCHOOL OF MEDICINE
MOBILE, ALABAMA

ENTRANCE REQUIREMENTS

Completion of a four years' high school course, or its equivalent, 14 Carnegie units. After January 1, 1914, one year of college work in Chemistry, Physics, Biology, and Modern Languages, will be required in addition; and after January 1, 1915, no student will be matriculated who has not completed two years of college work or its equivalent. Combination courses of six years for B. S. and M. D. degrees, and seven years for A. B. and M. D. degrees, are now offered.

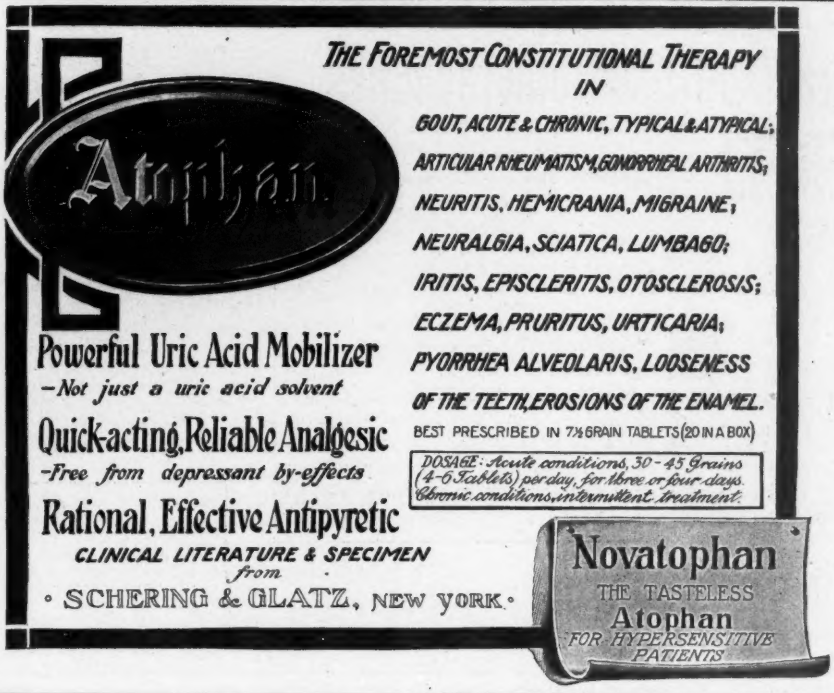
COURSE OF INSTRUCTION

Four years graded course, sessions eight and a half months long. First two years in well equipped laboratories, under full time teachers. Last two years in hospital and dispensary, with practical clinical work in small sections in medicine, surgery, obstetrics and the specialties. Clinical facilities ample.

Fees $150.00. For catalogue and other information, address

E. D. BONDURANT, M.D., Dean,

School of Medicine, University of Alabama. St. Anthony and Lawrence Sts., Mobile, Ala.



We exercise the most scrupulous care in the manufacture of our

Pharmaceuticals

A bottle sealed from our laboratory is an assurance of quality within that would be hard to express in words; a trial only could adequately express.

Van Antwerp's
THE BEST ONLY

PHARMACEUTICAL LABORATORY

VAN ANTWERP BLDG. MOBILE, ALA,

Practical Electrotherapeutics FREE!

The only American coil to receive an award at the International Red Cross Conference, Washington, D. C., May, 1912.

Its essential features and exclusive points of superiority are fully protected by U. S. Patent 1,012,326.

It attracted much favorable attention at the recent metings of the Southern Medical Associatiton in Jacksonville.

Is adapted to both X-Ray and Therapeutic use. Send TODAY for catalogue giving detailed description and our free booklet, Practical Electrotherapeutics, which will give some suggestions as to its range of usefulness.

Model "E" High-Frequency Coil, with Separate Cabinet.

Name .....

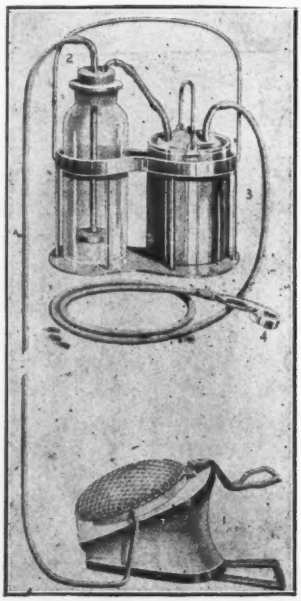
Address .....

.....

.....

Mail coupon TODAY for catalogue and fourth edition Practical Electrotherapeutics free.

CAMPBELL ELECTRIC CO.,
LYNN, MASSACHUSETTS



CONVENIENCE AND SAFETY IN ANESTHESIA

CAINE-McDERMOTT WARM ETHER APPARATUS

Gives a continuous flow of warm ether vapor without the use of a flame. By administering a warmed flow of ether you increase its volatility and rapidity of absorption, thereby decreasing the dangers of over-dosage and deleterious after effects.

The CAINE-McDERMOTT apparatus is particularly valuable in operations in the throat, around the jaws, lips, cheeks, etc., as its use permits a wide and unobstructed field for surgical manipulations.

Suitable for all kinds of operations by the simple attachment of the Gwathmey mask.

Write for special descriptive circular.

The McDermott Surgical Instrument Co., Ltd.
734-738 Poydras St., NEW ORLEANS, LA.

SOUTHERN MEDICAL JOURNAL

PUBLISHED MONTHLY

Volume VI NASHVILLE, TENN., MARCH 1, 1913 Number 3

ORIGINAL ARTICLES

COMPELLING HEALTH—A STUDY OF ATTITUDE.*

By Robert S. Carroll, M. D.,

Medical Director Highland Hospital,
Asheville, North Carolina.

Introduction—Since medical science has emerged from the dominion of demonology, astrology, supersition and empiricism through the epoch-making advances in chemistry and bacteriology, scientific exactness has so appealed to us as a profession that we have become negligent, if not intolerant, of the metaphysical. We have concentrated all our forces on studying and combatting the disease, meanwhile, too frequently, neglecting the patient. Psychology asserts that man is more than a mechanical combination of tissues, that the activities of his cells, wonderful and essential though they may be, do not alone constitute human life, but that man possesses a mentality which also must be reckoned with in considering the equation of sickness. The psychology of our school days was a pretty theory, dreamed out in the library of the writer. The psychology of today is being erected on a foundation of most careful, painstaking, conscientious laboratory experimentation, and the laws now formulated reflect deep human experience. The brilliant achievements of our surgeons give us a proud confidence that man's mechanical infirmities have been mastered. The resistless progress toward accuracy of diagnosis and the deft untying, one by one, of the entanglements of infection, give us assurance that chemical certainty is shortly to place in our hands the power to control that vast chaos of suffering caused by toxins. Meanwhile, let us not forget in our war with sickness that it is the mind that suffers, and venture the statement that today, with our superb equipment to handle the physical, most of the failures in the hands of good physicians are a result of ignorance of or indifference to the patient's mentality.

*Read at sixth annual meeting of the Southern Medical Association, Jacksonville, Fla., Nov. 12-14, 1912.

In this study we will consider that probably most obvious and easily determined of the patient's psychic processes, his attitude. By which I mean his behavior or conduct as indicating his opinion or purpose. It is this relation to sickness and treatment which I contend we should understand and be prepared to influence. Every truly successful physician is unconsciously a psychologist. Many who adroitly control their patients would, however, be unable to tell us how they accomplish it. Let us try by entering into the subject with some of the earnestness with which we would discuss a new physical reaction, to formulate a better working basis for the helpful control of our patient's mentality.

The Attitude of the Patient to His Sickness and Treatment—How quickly the spirits droop under the touch of even mild illness. Illness is an abnormal condition. The body is a sensitive instrument, sensitive to every touch of the mind, the master musician. Perfect harmony must exist between the two or discord results, and when the player ceases to caress the keys of thought, the great organ is mute. We do not question today the direct and positive influence of the mind upon the circulation, blood-pressure, the secretory glands, digestion, respiration and nervous reactions. The interdependence of mind and body is now so obvious that we are indeed reprehensible when we neglect in our study and treatment either of the twain. And is it at all strange, that in this unity of action and reaction, in which the physician even is frequently at a loss to determine which is psychic and which organic, that the patient is absolutely at sea? Who is to say in a given case, which is the offender, the morbid sensation or the morbid emotion? Practically always, the patient will attribute his emotional reaction to a physical sensation and the mind which does not know itself becomes distraught in the presence of these disturbances. The stuffy feeling in the bosom may be the early sign of hardening arteries, but more frequently is it the nervous contraction of the pharyngeal constrictors, a physical response to apprehension. Unquestionably in both cases there is unnatural tension, one produced by organic changes, and standing as a warning of im-

pending physical danger; the second, as definite, yet as innocent of physical seriousness as a maiden's blush. And how frequently does the man with the early sclerosis toss his warning sensations aside and neglect the counsel which would add to his years, and how much more frequently does the sufferer from globus increase her disturbance by unnecessary attention, and how in and out of season does she consult us to "relieve that awful choking in her throat." The man with organic damage goes in and out, attending to his duties, ignoring his sensations and counting himself well, while the neurotic with sensations devoid of possible damage, gives up, deserts duty and becomes an invalid—for health is fundamentally a mental state.

We can class all patients in two groups. One the salt of the earth, strong, noble, worth while, recognizing their duty to others, whether sick or well. The second group, the weaklings, that great army for whom sickness constitutes the excuse for failure.

The Normal Attitude—In the experience of most physicians, the normal attitude of the patient is uncommon. What a joy, yes, an inspiration, is the hopeful, co-operative patient, feeling and expressing gratitude for the earnest and faithful services of his doctor! And why are not more patients hopeful? The tendency of disease is toward recovery. The average person is probably sick fifteen or twenty times—he dies but once. And why should he not trust? Who is more anxious for his recovery than his physician? Where outside of our profession are thought and fortunes and lives spent to master disease? Who but the medicine man emerges pale faced from his years of cloister-like life of study that he may restore health? Thus it would appear that if the patient possesses reason, faith in and co-operation with the principles and details of his treatment would be unquestioned.

Superficially, we might consider gratitude an extraneous attitude. But when we see the gladsome face and feel the warm hand pressure of grateful patients, we know that helped though we have been, it is more blessed to give than to receive. But hopeful, trusting, co-operative well men are not common, and sickness all too frequently changes even their attitude, and but rarely is the doctor met by what we have called the normal attitude.

Disorders of Attitude—The abnormal attitudes are so numerous that we will have time but to glance at several and study a few. The ***selfish*** patient is perhaps one of the most common types. With the advent of sickness he becomes the center of his little universe and there is nothing too good for him, nor much too bad for the rest of us. Some of the most difficult cases of chronic nervous illness, prove to be a disability-increasing partnership between the selfish patient and the over-loving parent, and the selfishess of many a daughter has been the only disease in the family, which vampire-like sucked away the mother's life blood. Many a physically sound, selfish neurotic, has lived in fat and plenty on the slavery of a toiling and loving family.

The Sensitive Patient—What a connoisseur she is in the niceties of suffering! Even though as gentle as the kiss of the sun upon the wings of the butterfly, the sensation produces an exclamation, and it is a pain here, discomfort there, an ache, a burning, "an itching, a throbbing, an unbearable weight, a choking, a fullness, a giddiness, a misery, 'horrible, terrible, the worst, never-ceasing, agonizing, excruciating." These, with all adverbial modifiers, constitute the sensitive patient's description of life. The poor mind, feeding upon itself—how one itches to rub this patient in the soil of honest work until simple bread and meat, and a couch on the bosom of mother earth stand for happiness.

The indifferent (apathetic) patient appeals strongly to our desire to help. He may be dull of wit and hopeless. More often he is an unfortunate who needs the stimulation of our hope. Much less appealing is the unreasonable patient. In the emotional type of sufferers, the sensations attendant upon illness soon submerge rational thought life. And all of the firmness of the physician's character is required to avert the panic or direct the flight of unreasoning fear thoughts. The most frequent damage for unreasonableness, is the inability of the patient to discriminate between the sickness and the suffering. How many there are whose only thought is relief, and alas! how many physicians there have been, who through ignorance, indulgence of a truckling willingness to satisfy this irrational attitude, have prescribed the stimulant or administered the narcotic, which brought hell into the victim's life.

The lazy patient is not so tragic a figure, yet in the face of many chronic illnesses, hard work on the patient's part, is the only possible avenue to restoration. Sickness breeds laziness, and again nature takes her revenge upon the life of inactivity, if not in this generation, the next or the third. Inactivity is dissonant with life, and even the idly busy are going to suffer partial death from disuse of their talents.

How often do our most nicely wrought calculations come to grief, through the vagaries of the impulsive patient. Under your influence, the course of treatment is most enthusiastically entered upon.

A whim and it is off, impulse follows impulse and the physician who tolerates such treatment is either a Job or a weakling. The impulsive patient has never mastered self, for self-mastery implies a definitely directed expenditure of effort.

And again, how our hearts are touched in the presence of the hopeless patient. Hopelessness is a mental pitfall, dug by those who live with their failures. If we can but turn the eyes of these sufferers from the past to the future; there are indeed few to whom we could not extend some ray of cheer. The hopeless doctor got into the wrong profession. He should join the United Brotherhood of Embalmers and Undertakers.

Some of the most entertaining of our patients, especially during our early days of practice, are the conceited sufferers. They constitute two groups—those who are the greatest of all possible sufferers, whose feats in illness have never been equalled, whose cases have never been understood, and who show their superiority in and out of season, by discoursing upon the miracle of their continued existence. Their conceit is of their suffering. The second group is larger possibly, and embraces those whose opinion of their judgment is so exalted that they can rarely agree with that of the physician, and when grudgingly they accept his directions, you may be sure they will show you that you are wrong, even if it is necessary to continue ill to spite the doctor. Of little worth is your ability in their hands, for it is generally some advice of theirs which you followed that successfully terminated their illness.

Dr. J. J. Putnam has well described self-consciousness as a disorder of attitude. "The graphically self-conscious person is one who has a vague knowledge of himself, as surrounded by an imaginary circle of care-takers, enemies and admirers, toward whom he must adopt an attitude of shame, secrecy, hostility or superiority." Little knowledge of the mind is necessary to know that this attitude cannot be continued indefinitely without resulting in morbid depression. Contact with real life, real people and real trouble is the cure. Do we not all remember our first self-conscious efforts before the public? Which suffering was the greater, childhood's aching tooth or its stammering embarrassment?

How potent is superstition in its grip upon the sick! During years of general practice, I was brought in contact with the ignorant plantation hands of Texas, and soon learned to recognize the "tricked nigger." Distasteful as such methods were, I knew at that time no better way of overcoming the paralyzing fear of superstitious terror than through the counter appeal to the mysterious. The calomel and quinine were accompanied by a special tablet, pinned to the clothing over the heart, to be dissolved and taken on the knees at midnight. The poor negro's infection by plasmodia was a mere trifle compared with the psychic infection of terror produced by the voo-doo spell, worked by his malicious human enemies. Simple as seem these gross superstitions, let us not forget that many of the intelligent are secretly influenced by unreasoning fear of the supernatural, luck and omens, and cannot co-operate with treatment contrary to these fears.

The depressed patient is to be pitied. We are too prone to thoughtlessly and sometimes impatiently attempt to jolly these poor sufferers or ridicule them into a different attitude. The depressed patient, is suffering mental pain, and a few minutes given to thoughtful, sympathetic analysis of the cause of this attitude will help both physician and patient.

Of the vicious and morally irresponsible little can be here said. Too frequently eugenics offers the only cure, and too frequently again, in the individual, fear of punishment or actual force is the only available influence for cooperation.

Let us close this lengthy list of unfavorable attitudes by the closer scrutiny of a few of the most damaging, which may be more helpfully considered concretely.

Mr. B. at fifty-nine retired from a most successful business life as a wholesale merchant. Of moderate education, he had cultivated kindness and mildness and honorable dealing, was highly respected and had many friends. His father died, so his history reads, "of nervous disease at sixty." Mr. B. had always been well and temperate, and, according to his friends, a man of excellent parts. He had learned to love the routine of his work, had taken sufficient relaxation, and in giving his children advantages he had not known he had derived much happiness. From all points of view Mr. B. should have turned into the pathway of advancing age smoothly and quietly, but there were two skeletons in his closet—one of bone, the other a spirit. A poor young man, his teeth had not received proper care, and fourteen remained more or less worn and decayed, and none articulating, so for years Mr. B. had chewed imperfectly. For over forty years he had had no dental work done, for his early experience with the tooth-puller had created an insuperable fear of the dental chair. He had been properly advised to have his mouth attended to, but would not entertain the thought.

The spiritual skeleton was another fear. His father, always healthy, had suddenly gone to pieces nervously and died at sixty. At fifty-nine Mr. B. was much like his father, and as his sixtieth birth-

day approached the grip of terror made itself felt day by day. Thinking to forestall fate, he sold his business; he would retire and by a life of relaxation escape the execution day. This proved a mistake, as it but gave him more time to anticipate the dread message, and each day proved a new fear binding his forces into helplessness until there seemed but one escape, that pitiful, irrational loophole—suicide. All the joy of life, all the comforts of comparative wealth, the interest of friends and the doings of this busy world faded before the two ever-present thoughts—fear of death and the necessity for self-destruction. The oldest son, a recently graduated physician, realizing the seriousness of his father's condition, took him to a neurologist, who referred him for treatment. The physical examination was practically negative, with the exception of the poor teeth and a quite marked indican reaction. The mental examination revealed a man sick unto death with fear. His attitude toward all life reflected little but terror. He feared the night with its sleeplessness; he feared the day; he feared his food; he feared his medicine; and, worst of all, he feared himself. The coincidence of his age with his father's death year was, fortunately, ascertained at the initial examination, as was the physical fear of the pain of dentistry. The promise of absolute cooperation from the doctor's son was given. The patient was closely watched, so there was no opportunity for self-injury, while every article by which damage could be inflicted, even to his pocket knife, was put away. A fermentable rather than a decomposable diet was given. For the first few nights a dram of paraldehyde induced sleep. Every other morning one and a half ounces of castor oil lessened the intestinal intoxication, while an active out-of-door life was insisted upon; and, in the face of protest and listlessness, he worked until he perspired, and in a genuine backache found, for the time being at least, quite as much of certainty as in his impending fears. As had been planned with the family, he was one day brought to the treatment room, introduced to a dentist of nerve and ability and told that his mouth was to be examined with the object of saving any good teeth and removing the damaged ones. It was pitiable to see the old man in the grip of reasonless terror. Assurance of painless treatment had no effect, and it was necessary to help him to the chair. It was only with the dentist's warning that if he did not hold still he would certainly be hurt that he gripped the chair, exclaiming that "this was his end." The needle prick of the local anesthetic was the worst pain, and in five minutes he was literally hugging doctor and dentist, for he knew now that he was going to get well.

One skeleton had been destroyed—a fear of forty years. Immediately hope and faith entered to rout the other skeleton. Several weeks of active, out-of-door, industrious life sufficed to send him home to resume his old business and to add to his cup of happiness by periodic expressions of gratitude. By force, practically, Mr. B.'s attitude of terror toward his condition had been transformed into one of confidence. The intestinal auto-intoxication, an outgrowth of years of imperfect mastication, played probably an equal part with superstitious anticipation of dying as did his father, but, withal, the basis of this man's case was fear and his deliverance psychic. Fear is the mother of worry; fear habits grow without cultivation, even as weeds in an unworked garden. The one great lesson which psychically we had to teach this man for his future safety was the cultivation of indifference to the unavoidable, coupled with that greatest of all psychic helps—faith.

THE INDULGED PATIENT.

Mrs. G. was sixty-nine years old, and it was only after her very explicit directions and to the accompaniment of many a grunt that her hundred and eighty pounds of jelly-like tissue were carried up the hospital steps, and, oh! so gently deposited in her room. Then at once there was a scurrying to open this window and lower that; to wrap this rug about her feet; to shade her eyes; to get her pillow under her back; to loosen her dress at the neck; to give her something at once to revive her; to fan her and rub her hands; and for some time two nurses and two doctors were thus kept humping, for Mrs. G. had been traveling for twenty-four hours and must of necessity be well-nigh exhausted. Mrs. G.'s physician was an honest, earnest, competent man, a surgeon of reputation, and for a number of years he had cared for this wealthy patient with the devotion of a son. Her condition had grown from bad to worse, until, finally, his inability to keep her in any way comfortable without the use of morphia had offended his sense of right, for he knew how rapidly the damaging habit would form and demoralize the patient he loved. His earnestness and care were shown by the fact that the patient brought eighteen separate forms of medicine for eighteen several disorders, all numbered and labeled with their respective objects. There was, of course, constipation medicine, diarrhea medicine, medicine for gas in the stomach and gas in the bowels, headache medicine, backache medicine, tablets for vesical irritability, a liquid for renal inactivity, medicine for chills, medicine for biliousness, sleep medicine, and, most prized of all, the medicine for gallstone colic, which was always kept near the patient in her handbag,

for the gallstone attacks were the most frightful of her long list of ailments, and, if started, nothing but the doctor's hypo would give her relief.

Mrs. G. had received a good education, had taught in a girls' school for a number of years, and later married well. She gave a history of having overpracticed in music, having had indigestion as a result of hard study as a girl, and several breakdowns from a spinal trouble resulting from a so-called attack of meningitis. This is a suspiciously neurotic list and proved the preparation for the nervous catastrophe which followed twenty years ago, when, after a period of happy married life, her husband was brought home from a wreck dead. Her fearful sorrow wrecked her life, and the memory of that day of tragedy was sufficient for years to completely prostrate her. The estate was fairly large, and there had been no necessity for Mrs. G. to lift a hand in her own behalf.

She had long eaten juicy beefsteaks, tropical fruits and the delicacies from a large market. Her appetite was always good, and upon admission to the hospital she weighed 180 pounds, though but 5 feet 2—and what a poor, suffering mess of protoplasm it was!

Impatient and gentle, exacting and pitying, unreasonable and entertaining, her daily life touched every known note of the emotional keyboard, but no chord was ever struck which was not of harmony with self-indulgence, and the eighteen labeled packages of medicine were but a fraction of the medicaments she would have had if each symptom had had its antidote. In addition to the periodic doses of morphia, she had used for months for sleep one or two five-grain powders of veronal. She was a pathetic slave to sensations, and who would not hesitate undetraking the rehabilitation of one so possessed, so chronic?

The diagnosis of chronic hysteria was made and the probable course of treatment outlined to her accompanying physician, who honestly and frankly admitted his five years of mistakes in handling her, and gave the hospital absolute authority to manage the case for the patient's ultimate good. The treatment was simple. The patient was isolated in the care of a competent, specially trained nurse. The first conference was devoted to a simple but clear and forcible explanation that all her various aches and pains and diseases, so-called, were but manifestations of a central nervous defect, termed hypersensitiveness. A careful explanation was made of the unquestioned suffering of the nervous system, and it was shown how a poisoned nervous system could reflect its discomfort into every part of the body, and that, instead of the eighteen medicines to inadequately control eighteen disorders, she would be given one medicine, which, as the days went on, would mitigate the sensitiveness, the mother of all her pains; so her only order to produce relief was a half teaspoonful of tincture asafoetida in one-fourth cup of hot water every half hour, p. r. n. Nothing else was given.

Moreover, each day she was to give up some of her coddling apparatus. It was first the special time-worn back pillow; from four pillows at night she had three, then two, then one; one hot water bottle went, and then another; quite early her flannels, for she believed she dare not sleep otherwise clad without becoming rheumatic. Windows were gradually opened and shades raised, and later a few shocking drops of cool water were added to her bath. The second psychic lesson that she comprehended was that she had made her nerves her enemies, and not her friends, and the third and hardest was that liberty from her thralldom lay in the welcoming of the uncomfortable and the conquering of her almost insane sensitiveness by deriving satisfaction from her ability to stand this discomfort and then another. From a high proteid diet she was reduced to calories adequate for her real needs.

There was many a fight between inclination and her new conceptions. There were miserable half hours now and then, there was open rebellion, but the nurse pursued the even tenor of her way, and orders were carried out to the letter on the minute. In seven weeks she was taking her first feeble steps, and four months later, at the end of her treatment, she was proudly going two miles a day over the hilly streets of Asheville and doing some house work. A year later she celebrated her seventieth birthday by a morning in the shopping districts of her home city, actively making purchases, and writes of her health, her ability, and naively adds that she only now and then is taking a dose of the medicine.

Much psychic work was necessary in this case in changing her attitude toward the deaths of her husband and a beloved daughter, and in substituting self-discipline for self-indulgence. Gradually this was done; the knowledge first, then the effort, and finally the power of new associations formed habit, and she is keeping well. She has now learned to make friends with her surroundings, while for years each noise, each draft and every duty was an enemy.

This woman could not have been cured at home—of a highly suggestible type—and it was to this suggestibility that the rapid change was possible; it was necessary for her to be surrounded by an absolutely new atmosphere, where all possible suggestion of the old life was shut out and she was shut in with rational, wholesome, health-making ideals. Home should be, but too often is not, the best place for the nervous patient.

The Doubting Patient—Mrs. H. B. was the wife of a successful Western banker, and entered the hospital at sixty-nine, frail, anemic, almost starved—a victim of doubt. In her religion she accepted no creed; she was a moralist. She had been well till fifteen years before, since when she had become progressively weaker, more irritable, and an increasing sufferer. She had been a tremendous worker, for she thought no one else could care for her home, do her cooking or iron certain articles of clothing satisfactorily. Her husband managed the bank, and she managed the fine, large farm herself; all the hands reported to her; she arranged all the work, and the poor soul wore herself threadbare because she could not place sufficient confidence in her help to trust the work in their hands. Associated with her system of morals, she had developed an equally independent system of medicine, and most valiantly did she refuse to be visited by or consult a doctor. As the years passed she eliminated one after another of the articles of ordinary diet, because she felt they were disagreeing with her; her worries increased, and this woman, who had never given up to anyone, who had always had her own way, became so unreasonable that her family found it necessary to save her from herself. A long-standing friendship, with a desire to spend a winter in the South, decided her coming to Asheville, where her family placed her under treatment against her will. She had faith in no doctor, but she became interested in her examination, and was soon unbosoming her treasury of problems, and she had a unique collection. She had a layman's explanation of many of her feelings; sensations, normal and abnormal, were badly mixed; and out of her equipment of newspaper medicine she had evolved ideas such as the following: If she wore a pair of stockings over four hours, the uric acid from her body would so impregnate them as to cause intense headache from reabsorption. This for a sample. While not actively resistive or rebellious, she questioned all that was done, prophesying her own early death as the result of the treatment she was receiving. For years she had not been able to drink milk—"it poisoned her"—but soon she was handling well three pints of milk and eight ounces of cream. This was rapidly increased until she was taking two quarts of milk, a pint of cream and sixteen raw eggs a day. The rounding out of the emaciated body was the wedge which was to separate her from her doubting attitude, but the final deliverance came through a bunch of grapes. She had been in the hospital about two months and had gained over twenty-five per cent in weight, was wearing black stockings without changing for twenty-four hours, and, in the face of protests, doing many other things for which she claimed inability. After her first fruit breakfast it was reported that the patient seeded her grapes. Her nurse was asked to explain the benefits of swallowing her grape pulps with the seed. Again she seeded her grapes. The order was sent that Mrs. B. swallow her grapes unseeded. Later in the day the nurse found the grape seeds slyly hidden. When confronted with this discovery she sent for the physician, and, with a certain pathos, spoke of her age, of the few years yet remaining to her, and of how unnecessary it was for one so situated to be made to do those things which were dangerous, and begged to be relieved of eating grapes. She was shown how many of her fears she had overcome, and the need for some insoluble food material was pointed out. The vital point was then touched. She was afraid of appendicitis, and was possessed by the belief that grape seeds were the cause of this disorder. Eagerly she defended this, relating several cases in which the doctors had found grape seeds in the appendix. This fear, with her deep habit of doubt, rendered her unable to accept the assurances that appendicitis had other causes. Seeing that she was making no headway, she asked for her handbag, and from its recesses took a folded slip of paper, stating that she always traveled with this draft to be used in an emergency, and that she understood the hospital received a certain number of charity patients, and thereupon offered the hospital a draft for one thousand dollars if she would not be required to eat grapes. The physician's indigation was, I fear, of the opera bouffe type. The situation was pathetically ludicrous. Assuming most righteous resentment, he rang for grapes, and doctor and patient feasted on the succulent fruit to the former's satisfaction. Yes, she had a spurious appendicitis that afternoon—the kind that is cured by asafoedita—but for many mornings afterward she ate her bunch of grapes—yea, her two bunches. With the return of flesh, hemoglobin and strength came a confidence in sensible, rational living, and for four years she has been quite normal. Firmness in the face of objection was necessary to compel health in this doubter. Psychically, her provincial confidence in her own opinion was fundamentally shaken, and she was carefully taught to apply her doubts to her own opinion and ability along certain lines of life.

The Wilful Patient—Mrs. D. was from a high-strung, exclusive, aristocratic Charleston family. She was the mistress of a splendid cotton plantation, which she ruled with almost ante-bellum authority. Too much to eat, too little work, and her headaches increased until they were called tic douloureux, and morphine was administered, at first periodically, then, of course, regularly. It affected her peculiarly, increasing her natural imperiousness and adding

suspicion and quick-forming enmity. The plantation hands became afraid of her; she was indulgent and cruel, in turn, with her children, and became most unreasonable to her husband, a man of unusual evenness of temper and self-control, accusing him of immorality. Of good education and "from a family of scholars," she always had peculiar ability in argument, rarely failing to overthrow her adversary. Of this gentle art she was proud, and her quiet Scotch husband was no match for her logic. The situation became serious, and upon advice her husband placed her in a sanitarium for treatment. She stayed but a few days, outtalking the management. A second effort was likewise a failure. Without the publicity of commitment, she was taken to the state hospital, but when she realized where she was she demanded the services of an attorney, and within a week was again at home. Finally she was brought to North Carolina and duly committed for six months. She vowed she would not stay, and most ingenious were her plans to secure release. During the period of removal of the drug she was, of course, unable to make any headway in her efforts, and so carefully was she watched that weeks passed before she could put her plans into execution. Finally one night the nurse, who slept in her room, inadvertently did not push her cot against the door after entering. At 3 o'clock in the morning, with almost preternatural slyness, she extracted the key from under the nurse's pillow, opened the door, re-locked it and let herself down from the second-story window. Arrayed in gown and blanket, in a strange city, she made her plans to return home. Securing admittance to the home of a family of moderate means, she asked them in what city she was, and stated that en route to Cincinnati she had started to the toilet room, and, mistaking the door, slipped off the train; that she wandered around, dazed and confused, and had just come to herself, and asked to be cared for and have telegrams sent to her family. Assuming the name of friends whom she felt would help her, the telegrams were sent them. Her hiding place was soon discovered, and in the face of resistance and protest she was returned for treatment.

Her headaches rapidly disappeared, as the relation of food and exercise was properly adjusted, and out-of-door life soon brought bloom to her pale cheeks. Under the influence of uncontested authority, and through the uplift of honest toil, which her aristocratic rearing had scorned, new sensations were borne in, and in the face of undeniable health and comfort the way was opened to show her the difference between the exercise of normal will and the selfishness, weakness and damage of willfulness. Out of it grew a wholesome life, and in that battle which we all know between the will and the wish, the former finally obtained ascendancy. Her husband recently stated that this conception of the normal will had made her a different woman.

The Satisfied Patient—The Rev. W. was a Baptist minister of sixty-two, anxious, sallow and emaciated. For years he had been a nervous sufferer until he had, in truth, ceased to suffer, for he had accepted semi-invalidism as his lot, and as a rural minister it played him a good part. He was never expected to work. If the weather was inclement, Brother W., of course, could not hold services, but, instead, some thoughtful sister would send him the delicacies from her own table. "Poor Brother W. is so frail and is probably having another of his spells." So year after year the spells came, peculiarly never interfering with the pleasure of his simple life nor keeping the gentleman from meeting business appointments, wherein affairs to him advantageous were involved, for he had developed a good real estate business on the side, and from a worldly standpoint had done well. So satisfactory was this reverend gentleman's illness that the years flew by with no active efforts for cure. Naturally, the sympathy crave grew, and in the presence of his pitying flock he rarely failed to report in detail the various health incidents of the week, and so for many years he was the center of sweet attentions from church and family. It all started through an ignorant physician when Brother W. was sixteen. After dinner, while working during harvest time, when he had eaten as only a sixteen-year-old boy can eat, he had an attack of palpitation. The young doctor summoned found the heart bouncing wildly and was frightened. The overloaded stomach was not recognized, and for two months the boy was kept in bed that his heart might grow strong. Such was the psyschic infection, and what was a young heart to do but respond to all this anxiety and treatment? And so it fell into the habit of palpitating on occasion. "A sufferer of organic heart disease," a marked man, and so most circumspectly did he live a half-invalid life for forty-six years.

Fear, indeed, ruled his heart, and no undue exertion was ever undertaken. He preached on his bad days sitting in a chair, and dear Sister W. carried all the burdens of the home. But inactivity demanded its pay. At sixty-two the balance of nutrition broke and new and disturbing symptoms appeared. The advertisement of an irregular practitioner in his church paper brought him to North Carolina. His purse was relieved, his symptoms not, and alarm grew apace and he sought other help. Examination disclosed a constipated, depressed, anxious, fearful man taking sulphonal and somnos to secure sleep. His sleeplessness and depression were the symptoms for which he sought help. The heart was found to

be organically sound, though flabby like his voluntary muscles. He stated that his "heart was hopeless," and, of course, did not expect that to be cured. It was with considerable hesitation that he gave his word to devote four months to getting well. He did not expect to be well, he never had been well, but if he could only sleep and eat again and feel like he did last year, he would be satisfied. A voluntary commitment was insisted upon, and the faithful, anxious wife sent home. Then the work cure started, and his cooperation was quite good until special treatment directed toward overcoming the irritable heart was instituted. The poor man actually expected to die on the first hill he climbed. In the course of time the critical day came when he was to be made to realize that the fears, the artificial life, the self-indulgence and self-pity, the uncounted contributions of generous sympathy for his bad heart, had been based on a farce. The struggle was pitiful, indeed. We started straight up Sunset Mountain; protest followed protest, and had it not been for the presence of a muscular attendant, he would probably have refused point blank to court death climbing a mountain in the face of a lifelong (supposedly) organic heart lesion. Naturally, half way up he was pretty short of breath, and passed several bad minutes, suffering some physically, but most acutely mentally. At this point he was asked to turn and look back. Never before had he looked down from a mountain side, and the newness, beauty and grandeur and the sense that he had attained this with his own effort, with his own poor old heart, came in upon him with all the helpful power of joy, pleasure, satisfaction and victory. He almost scrambled to the top, and, proud as a boy at what he had done, gave fervent expression to his thanks. He has never been the same man since. For weeks he climbed a mountain a day and returned home improved in strength and weight, sleeping well, eating normally, and recently reports that he is preaching two sermons a Sunday. Some shame of the sham work of his life came to him, and a manly facing of life and earning satisfaction through devotion to duty, rather than the cheap, miserable distinction of being an object of pity, were made part of his creed.

The Reckless Patient—Mr. F. was a wreck at twenty-eight. He smoked cigarettes at thirteen, began whiskey at seventeen, and drank regularly for eleven and a half years; was infected at seventeen, and at twenty-one an abscessing kidney was drained. Mr. F.'s father died when he was young, leaving him, in view of his surroundings, a rich young man. He was expelled from several schools, for he was emulating the life of his paternal grandfather, a gentleman of the old school of the South, a hard drinker, but who had left a name for hospitality, courtesy and independence. On his plantation his grandfather had been king, and there the grandson, mistaking license for liberty, played fast and loose, brooking no restraint but his own inclinations. He gave rein to an imperious temper, and his outbursts of anger were almost homicidal, so that both black and white avoided him when he was drinking. The cigarettes and whiskey with the kidney infection brought him to morphine, and for six years he was its victim, but under its influence was much quieter. At twenty-eight, with fortune gone and health wasted, this poor, anemic, shivering habitue typified most graphically the logical end of a life of reckless license. He voluntarily entered the hospital for two months, and was a rebellious, contentious and unsatisfactory patient. By the scopolamin method he was quickly taken off the morphine, and, in spite of his attitude, gained rapidly in strength, but at the expiration of eight weeks, and absolutely in the face of advice and assurance that he was not able yet to stand the wear and tear of life, he returned to his home, reaching there on a Tuesday. Friday he was drunk and Sunday he attempted suicide. An older brother, feeling it his duty, had him loaded up with morphine and returned him to the hospital, where he was legally committed for one year. When he realized his condition his rebellion was explosive, and most relentlessly did he resent the efforts made in his behalf. Finding escape impossible and the offices of a lawyer useless, he settled down to a series of attempts to take his own life, even breaking the electric light bulb to secure fragments of glass with which to open his blood vessels. After several unsuccessful attempts he was convinced that his knowledge of anatomy was not sufficient to endanger his life in this way; other bulbs were furnished till it finally came to him that with an alert attendant, and in a properly protected room, making way with one's self was too deep a problem for him to solve. A kindly interest in his needs was always shown him. He was treated as a sick man and not as a criminal. His restraint was tempered with courtesy, and as his system became free from the products of nicotine and alcohol and opium, and the body cells began to drink uncontaminated nutrition, a little of the comfort of life returned, followed by a desire to live. Walks, climbs and out-of-door occupations were gradually pushed during the succeeding six months until he was daily doing ten hours of hard, manual labor in practical forestry at the hospital camp on the craggy mountains. Recklessness gave way to willingness to be led. The influence of a fellow-patient, a young theological student, most helpfully pointed him to higher ideals, and now, with nearly three years of normal living, he is getting on his

feet again financially, for he went to work at the bottom. Restraint was absolutely essential in compelling this young man's return to health, but as rapidly as possible motive was substituted, and today he is what he is because of the persistence of motives thus inculcated.

Compelling Health—The physician's task in assuming charge of his patient is a complex one. First, he must bring a character of worth and strength based on a life of ideals fairly lived. An attitude of firm, wholesome kindness must be his. He becomes a dangerous influence when the suggestion of his presence does not inspire hope and confidence. Most earnestly, thoroughly and wisely must he make the physical estimate of his patient's needs. He must consider the influence of the patient's environment, his work, his family, his associates, and, finally, with equal skill must determine the patient's attitude. This attitude will probably be abnormal, and the first step in modifying it is to shift one's own background of thought to the patient's, to see why and how he thinks and feels and does. Therein the physician finds his first real hold upon his patient, for he creates a common ground of sympathy. This is true tact. This done, the doctor must guide his charge away from his damaging position till the viewpoint has been changed to the normal. The physician who does things brings authority to his cases—the authority of skill, the authority of self-confidence—and he frequently wisely augments this by consultation. Weak, indeed, is the practitioner who does not control his patients. There is, unfortunately, a certain perverted class of sufferers who respect no will nor law but their own. Patients paralyzed by fear, by superstition, or bound by bonds of selfishness, viciousness or self-satisfaction, who must be compelled to return to the normal. In extreme cases legal authority is required to make possible the rescue of these otherwise hopeless sufferers.

Conclusion—The waste of unnecessary invalidism is appalling. From the social and economic standpoint it is criminal. To the family physician comes the unrivaled opportunity of determining the practical management of this host of unnecessary invalids. This he cannot do until he looks beyond the findings of the stethoscope, microscope and test tube. He must analyze his patient's mentality; he must recognize the large and increasing class of psychic sufferers, and he must match his mind, his character, his training with these devastating mental forces which are multiplying nervous invalids, and thus most perfectly fulfill his mission. Let us not forget that action is the whole expression of life, and that without productive activity humanity is simply a drifting derelict, without port or harbor, a menace on the high seas of life, until some merciful gale puts it out of existence on the rocks of time.

DISCUSSION.

Dr. J. C. Walton, Richmond, Va.—I want to thank Dr. Carroll for his most excellent paper, which, I am sure, has been a source of pleasure and profit to us all.

As Dr. Carroll well says, health is fundamentally a mental state. Dr. Carroll is doing work strictly along original lines, and his system of exercise-and-work therapy is certainly unique and worthy of investigation. In a recent visit to Dr. Carroll's sanitarium I was very much impressed with the results the doctor is getting in his treatment of alcoholic and drug addiction, and was forcibly reminded of the advice that the able and eccentric Abernathy gave to one of his idle rich woman patients. "Madam," he said, "live on a sixpence a day and earn it." The doctor utilizes the forces of nature, the vis medicatrix nature. He teaches his patients the importance of right living, and, as Sam Jones says, to quit their meanness. Being familiar with this line of work, I have been very favorably impressed, not only with the doctor's results, but also with his rational system of therapeutics.

In conclusion, I feel sure that if anyone present can have the privilege of seeing Dr. Carroll's work that they will be amply repaid for their labor.

SYMPTOMS AND CLINICAL DIAGNOSIS OF BUBONIC PLAGUE.*

By J. Birney Guthrie, M. D.,

Professor of Clinical Medicine, Tulane University of Louisiana.

New Orleans, La.

Sydenham has given us the most accurate of the older descriptions of this disease. Writing of his own observations of the plague in London in 1665 and 1666, he says:

"The first attack is almost invariably ushered in by chills and rigors (such being also the accession of intermittent fevers), which are followed by violent vomiting, by pain in the region of the stomach like that of the pressure of a screw, burning fever and its usual crowd of concurrent symptoms. These affect the patient without intermission, until either death itself or else the favorable breaking out of buboes or of parotid abscesses. Hereby the morbific matter becomes eliminated and relieves them from the appalling crisis.

"Occasionally it happens that the disease lights

*Read at sixth annual meeting of the Southern Medical Association, Jacksonville, Fla., Nov. 12-14, 1912.

upon the patient without any premonitory signs of fever whatsoever, so that, even whilst engaged in his common business, a man may be suddenly struck down—an eruption of crimson blotches being the only forerunner of his quickly coming death. It is important, however, to remark that death thus sudden rarely happens, except during the beginning of epidemics of more than ordinary severity. In years when the disease has been sporadic and during the remissions and decline, they have never been observed. It happens also that at times tumors may break out without either fever or any other important symptom as their precursors; although I suspect, for my own part, that chills or shivers, in some slight degree or other, and more or less perceptible, invariably precede. Those to whom this happens may walk about in public as usual, and attend to the common duties of life-like healthy men, taking no thought of regimen."*

The last description corresponds to a mild type of plague which occurs in most epidemics. It has been named pestis minor, but is of the greatest importance from the standpoint of public health; for as in the case of other infections alterations in virulence of the bacteria may occur in a comparatively short time and a suppurating bubo even in a case going on to recovery may be the means of widespread infection.

The classical disease picture which indeed furnishes the name to the disease is that of an acute septic lymphadenitis with extensive involvement of all lymph structures and general sepsis, chill, fever, depression, pains in head, limbs and back, anxiety and depression. The temperature rises gradually until the third or fourth day when a remission occurs and general enlargement of the superficial lymphatic glands takes place. Then a further rise of temperature ensues and the patient presents a picture of severe sepsis—fever, delirium or stupor, tongue dry and brown, teeth covered with sordes, twitching of muscles, etc.—except for the absence of emaciation similar to a badly treated and badly fed typhoid in the third week of the disease. Suppuration may occur at the point of original infection, oftenest on the legs, producing consecutively a vesicle, a pustule and perhaps finally a phlegmon; the phlegmon may occur in the glands in which the lymphatics of the region of original infection center or metastatically at any other point in the body.

There is considerable variation in the distribution of the primary bubo. Von Russell in 2,700 cases examined, found 69.7 per cent on lower limbs; 21.5 per cent in axillæ and 8.8 per cent in the cervical region. It is a matter of considerable prognostic import where the primary bubo is located. Enormous secondary lymphatic involvements may cause death through pressure on surrounding structures. This is much more apt to occur when the primary bubo is in the cervical region. Cervical bubo may be followed by mediastinal bubo causing bronchial or tracheal pressure. These may be located by percussion. Tonsillar secondary bubo may block the pharynx and necessitate tracheotomy. Abdominal glands may become secondarily enlarged and produce tender masses which are palpable through the abdominal wall and may give symptoms of acute abdomen.

The legs being the most frequent point of original infection, the femoral group of glands is most often first involved, primary bubo. Infection quickly extends to the inguinal glands, secondary bubo; and surrounding tissues become swollen and infiltrated and painful. Subsequently all lymph nodes in the body may become enlarged and tender from an extension of the infection, tertiary buboes. These where superficial may be palpated and aspirated for diagnostic purposes.

The spleen is palpable often as early as the first day of the disease. It is soft and smooth at the edges and extends two or three fingers' breadth below the costal border.

In few other acute infections is there such rapidity of involvement of heart muscle and vessel walls. The pulse becomes weak and rapid.

Hemorrhages are general into the skin and under serous membranes. These occurring at the height of the disease, usually after four or five days, often precede death, and give an appearance to the body suggesting the name, "black death." The tendency to skin hemorrhages varies in different epidemics.

The recent outbreak of plague in Manchuria has been characterized by great preponderance of cases of the pneumonic type. The lungs seem to become the seat of the primary infection. The pneumonia is of the lobular type. The physical signs are identical with *Pneumococcus pneumonia*. The sputum is more bloody and less tenacious and smears show *B. pestis* in enormous numbers. As a rule the respirations are more rapid, usually over fifty, and the pulse weakness develops immediately. This type of the disease is usually fatal in three days. The mortality is nearly 100 per cent. Pneumonia may be primary as above described or occur later in the disease as a metastatic process. The symptoms and prognosis of the case from the time of the development of a secondary pneumonia are like those of the primary type.

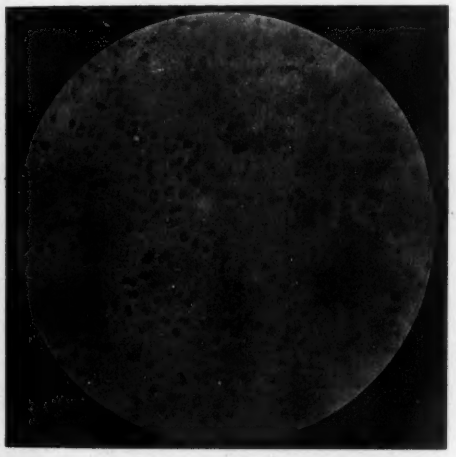
The septicemic type of the plague Sydenham has graphically described. In this type of infection neither buboes nor pneumonia are developed. Death occurs

*Reference Handbook of the Medical Sciences, Vol. 2, page 509.

before the lymphatic glands are to any extent enlarged. This septicemic type of plague fortunately is not common.

The appearance of the patient sick with bubonic plague is somewhat similar to that of one under the influence of alcohol. The face is swollen, the eyes injected. There is a general loss of co-ordination, staggering gait, thick and stammering speech. This speech disturbance frequently extends into convalescence and with persistence of lymphatic enlargement and recent scars of suppurating buboes, may furnish the clew to identification of a previously unreported case.

The recognition of cases of bubonic plague where it is known to exist presents small difficulty to the physician. It is the identification of the first cases, espesially if they are of mild type, which will present the severe problem in diagnosis. In a sus-



Plague Bacilli. Smear from Lymphatic Gland of Man. (Cut from Photograph of Author's Slide.)

picious case careful and continuous observation of the superficial lymphatic glands should be maintained and puncture with the needle and examination of aspirated fiuid made by smears and culture methods.

Venereal buboes should present little difficulty of diagnosis. There is usually the original focus infection in evidence. The bubo is more superficial than the bubo of plague.

Mumps, with extensive cervical enlargement, may be confused with cervical plague bubo. However, the involvement of the salivary glands would serve to point the way to the proper diagnosis. In considering the difficulties from mumps it must be remembered that in epidemics cases do occur in which the cervical glands only are involved without enlargement of the salivary glands themselves. Malarial fever and typhoid may be confused with plague. However, absence of lymphatic enlargement and careful blood examinations would serve to exclude these.

Finally, let this be emphasized, the early identification beyond any doubt of bubonic plague depends upon the microscope. It is the duty of the attending physician to submit to the bacteriological laboratory slides made from the fluid aspirated from every suspicious bubo and from sputum in every case of pneumonia showing more than ordinary depression at the outset with a bright red sputum instead of the typical rusty sputum of ordinary pneumonia. The services of the public bacteriologist should be available. Possibly it might be wise to require the specimens to be submitted.

The only hope of limiting an outbreak of plague is that of a prompt diagnosis of the disease. Today every seaport of the world is menaced by plague and the menace will be still further increased by the opening of the Panama Canal. It, therefore, becomes the duty of every one who practices medicine in a seaport to keep constantly in mind the possibility of encountering the disease. To this end examination of the superficial lymphatic glands during the progress of every acute febrile case becomes a matter of necessary routine.

THE DIAGNOSIS OF PLAGUE.*

By R. L. Wilson,
Passed Assistant Surgeon, United States Public Health Service,
Charleston, S. C.

Plague was recorded even as far back as ancient times. Before the time of Christ reference is made in the Bible to a disease that killed the mice of the field. (Castellani and Chalmers: Manual of Tropical Medicine, 1910.) Numerous epidemics overran Europe from the early centuries in the Christian era until the seventeenth century. The "black death" of the fourteenth century is said to have destroyed one-fourth of the whole population of Europe. (Osler. Practice of Medicine, 6th Ed., 1906.) This disease is not only of interest to us in history from its widespread epidemics and heavy mortality, but it still appeals to us through its present-day world-wide dissemination, a veritable pandemic, with thousands of fatal cases daily. Of course, the heaviest death toll is in countries where little of sanitary science is carried out. For instance, there were more than

1,000,000 deaths in India during the year 1904. (Eager: Present Pandemic of Plague, 1908.) Plague is of still further concern to us of the United States because we have not only had it in our insular possessions of the Pacific, but also the Pacific Coast mainland, the Canal Zone, Havana, Cuba, and Porto Rico, and is thus knocking at our door on the Atlantic coast.

It is well to have in mind that plague is primarily a disease of rats, and secondarily of man and other animals, transmitted through the agency of fleas. In the present article the principal consideration will be the diagnosis of the disease in man, though plague in the rat and other rodents is intimately associated with the same disease in human beings. The diagnosis of rodent plague, however, especially in the rat, is of great sanitary importance, as it is often possible to detect the disease in a place before the infection has been passed on to man.

THE DIFFERENT FEATURES IN DIAGNOSIS.

For our present purpose only the most salient aspects in diagnosis will be presented, and these briefly, the object being to simplify the subject as much as possible in order to be of assistance to all physicians, especially health officers, who ought to be vitally interested in this subject. The various phases of the subject may be divided as follows:

*Read at the sixth annual meeting of the Southern Medical Association, Jacksonville, Fla., November 12-14, 1912.

I. THE DIAGNOSTIC CLINICAL SYMPTOMS.

(1) General features.
(2) Of bubonic form (including pestis minor).
(3) Of septiaemic form.
(4) Of pneumonic form.

II. POST-MORTEM EXAMINATION (GROSS).

(1) Petechiae.
(2) Lymphatic glands.
(3) Spleen.
(4) Liver.
(5) Lungs.

III. LABORATORY EXAMINATION.

(1) Smears.
  a. Lymphatic glands.
  b. Spleen.
  c. Other organs.
(2) Cultures.
  a. Agar.
  b. Bouillon.
  c. Other media.
(3) Animal inoculation.
  a. Method of making.
  b. Examination of result in animal.

I. THE DIAGNOSTIC CLINICAL SYMPTOMS.

On account of the many varieties of plague and varying degrees of severity, it is difficult to select any constant characteristics of the disease. The following conditions apply in a great majority of cases:

(1) General features.
  a. Sudden onset.
  b. Rise of temperature.
  c. Short duration, 3 to 7 days usually.
  d. Enlarged spleen.
  e. Enlarged lymphatic glands.
  f. Petechiae.

The most prominent characteristics of each special form of plague may be briefly stated as follows:

(2) Bubonic (including pestis minor).

According to N. H. Choksy, this form of plague occurred in 77.65 per cent of 11,600 cases at Bombay. Enlarged lymphatic glands are the most peculiar diagnostic feature, the majority being of the groin. The glands of this region more often involved, first at least, are the femoral—i. e., *below* Poupart's ligament. This situation serves to distinguish plague buboes, as a rule, from venereal buboes, which are likely to be inguinal—i. e., *above* Poupart's ligament. Plague buboes are usually more tender and painful than venereal buboes. Those of plague origin are less sharply defined, not as abruptly elevated, and there is bogginess and oedema and other evidence of extensive periglandular inflammation. Plague buboes do not often suppurate. It is well to remember that in pestis minor the buboes may be quite small and soon disappear, and other symptoms mild.

(3) Septicaemic.

14.25 per cent of the 11,600 Bombay cases. These are grave cases, and are characterized by the following symptoms:

  a. High temperature.
  b. Rapid pulse.
  c. Delirium.
  d. Death often in 18 hours to 3 days.
  e. Hemorrhages into skin.

The primary plague septicaemic death may occur before glands have become much enlarged. Septicaemia from other causes may have to be excluded. The main dependence in diagnosis may have to be placed on other diagnostic methods.

(4) Pneumonic.

Mortality 96.69 per cent in 514 cases (Osler). The principal features are as follows:

  a. Lobular form of pneumonia.
  b. Sputum thin and bloody, not viscid and rusty.
  c. Often buboes of neck
  d. Fatal form, death second to fifth day.

If the case is not seen before death, then, of course, the history must take the place of the observation of the clinical course.

II. POST-MORTEM EXAMINATION (GROSS).

(1) Petechiae. Spots of hemorrhage into the skin are often found at autopsy. These spots in olden times gave rise to the names of "black death" and "black plague." They are not so easily noticed in dark skin races.

(2) Lymphatic glands.

Enlarged lymphatic glands may be found in one or more of the following groups: Femoral, inguinal, axiliary cervical, mesenteric, bronchial, etc. The femoral and inguinal enlargements are more common of the external glands, though the cervical glands are often enlarged in pneumonic cases. After death, owing to recession of the tissues, small buboes may not be detected as easily as during life. (Blue: Post-Mortem Diagnosis of Plague, Public Health Reports, 1912; Report of Commission Appointed by the Secretary of the Treasury to Investigate Plague in San Francisco, Cal., 1901.)

Oedematous condition about glands and other characteristics before mentioned during life will be noted. Exclude as far as possible buboes of venereal origin by the kind of bubo as before mentioned, and by examination for chancres. On incision plague buboes and surrounding tissues run serum, often blood-stained, freely. The gland is hemorrhagic, this condition often extending to the surrounding tissues, the psoas muscle, for instance, being black for some distance in certain cases. If death has taken place early, say after an illness of only two or three days, slight or no enlargement of external glands may be made out, but deep glands, as the mesenteric, may show more enlargement.

(3) Spleen is usually much enlarged, deeper color, soft and friable.

(4) Liver is generally somewhat enlarged and shows signs of cloudy swelling.

(53 Lungs in pneumonic cases show usually small patches of consolidation, though extensive areas are at times found.

III. LABORATORY EXAMINATION

is concerned principally with the search for and tests on the plague bacillus.

(1) Smears.

a. Lymphatic gland. If during life of patient, draw some fluid from gland with a hypodermic syringe. Spread on slide. Dry in air. Fix with heat. If at autopsy, wipe cut surface of gland on slide, fixing as before. Stain with dilute aniline dye as 1 per cent carbol-thionin.

b. Spleen is only accessible at autopsy. Make smear as for gland at autopsy.

c. other Organs. May use lung at autopsy if involved making smear the same as with spleen. If during life, use sputum if case is of the pneumonic variety. Smears are sometimes made from the liver.

Important diagnostic features of the plague bacillus in smear preparations made above are its so-called "boat shape," bipolar staining and Gram negative stain. Great variation in size and shape of bacilli is often noted; especially is this true if tissue has been long dead, so-called "biscuit" and "dough-nut" forms being seen, and many forms not taking the stain well. In the great majority of cases of plague the specific bacillus will be found in smears from gland and spleen in enormous numbers, in some cases completely filling the field.

(2) Cultures.

a. Agar streak tubes or plates inoculated with platinum needle loaded from below seared surface of plague gland or spleen will often give isolated whitish moist plague colonies. Verification should be made on other media especially.

b. Bouillon, as in this medium development, is quite characteristic. The growth here is principally a surface pellicle, but fine particles may adhere to the side of the tube below the surface, the liquid remaining clear. On slight agitation the surface growth falls like crumbs or snow to the bottom. A hanging drop preparation from the broth culture shows long threads or chains of a short, thick bacillus without motility. Growth in culture takes place freely at an average room temperature of 75 to 85 degrees, so that an inculator is not usually necessary any time in the tropics or during summer in subtropical regions.

(3) Animal inoculation.

a. *Method of making.* Guinea pigs are generally used.

(a) Subcutaneous with syringe. If during life of case use aspirated fiuid from lymphatic gland, sputum, other available material, or cultures.

(b) Subcutaneous insertion of piece of gland or spleen. This method is particularly suited at autopsy, a small incision being made and the infected material inserted into a pocket under the skin.

(c) Application to shaved skin area. Here a culture or piece of gland or spleen is wiped on a small shaved area on the guinea pig's abdomen. The method is of value in mixed growths, the plague bacillus being inoculated into the animal, while other batceria are not.

b. *Result of inoculation.* If plague is contracted by any of the above methods, the animal usually dies within two to five or more days. To verify the cause of death, examination may be made of the animal, and if death was caused by plague the following conditions are likely to be present:

(a) Extensive subcutaneous injection, especially near site of inoculation.

(b) Presence of buboes.

(c) Spleen much enlarged, dark red in color, and often with many small white nodules.

(d) Liver enlarged, with sometimes small, yellowish-white spots.

(e) Pleural effusion.

If desired or deemed advisable to make work complete, cultures may be made from glands, spleen, etc., with the intention of recovering the plague bacillus in pure culture.

How much of the above diagnostic procedure

would be advisable or necessary in any particular case would depend on several conditions, especially whether it is the first case, or one of the first cases, in a locality. Positive smear preparations in connection with clinical and gross pathological data are usually sufficient after infection is established in a place. In cases where bacilli are scant in spleen, gland or other organ, and smears are negative, cultures and inoculation may be positive.

One need not be bluffed, however, by any supposed difficulties in making a bacteriological diagnosis, as smear preparations are easier made than similar preparations from sputum in examining for tubercle bacilli, and the appearance of the bacilli in one case is about as characteristic as in the other, the advantage being in favor of plague, as the bacilli are more easily recognized and are often much more numerous.

Physicians, especially health officers, all along our seacoasts should be constantly on the alert for the first cases of plague in rat or man, and all suspicious cases should have whatever diagnostic methods applied to them as are reasonable in order to show or exclude plague. If it should show up, nip it in the bud. To remain in blissful ignorance of its presence or to try to hide it will work greater permanent injury to everyone concerned.

In plague work great care should be taken in handling infected animals, tissue, cultures and other material. Even persons accustomed to bacteriological laboratory work have to be reminded of danger, as several laboratory cases of infection are on record. The principal things to look out for are fleas from animals, skin abrasions, soiling of fingers, using of pipettes and smoking.

To summarize the principal points in diagnosis:

(1) Typical lesions, especially characteristic buboes.

(2) Production of the disease in animals by inoculation.

(3) The unmistakable presence of the plague bacillus in smears, cultures and inoculated animals.

DISCUSSION.

Dr. Henry Hanson, Jacksonville, Fla.—The paper of Dr. Wilson is so complete and has dealt so masterfully with the subject that it would be unwise for me to attempt any extended discussion.

Dr. Wilson has spoken of the various types of plague—the bubonic, the septicemic and the pneumonic types—and the development of lesions at the local sites of infection. In the bubonic type the bubo is the most prominent feature, and invariably appears in the gland that is nearest the portal of entry of infection, which is usually where the patient was bitten by a plague-infected flea.

The liver lesions are interesting in some of the cases (I am speaking of animals, rodents) on account of the variations from the text-book description. The lesions in the liver, as you have already heard, consist of small punctate, whitish or grayish areas, of varying size; but in the experimental animals one may find that these areas in the liver are so minute that it requires the use of a hand lens to make them out definitely. In the skin one usually depends on the finding of marked injection and congestion of the subcutaneous blood vessels, which is most pronounced about the enlarged and diseased glands, the buboes. It has been found that the enlargement and breaking down of glands is not an infallible sign of plague among rats. Old rats examined in the laboratories of this state were found to have enlarged and suppurating glands, but did not show the bacillus pestis.

The pneumonic type is usually a bronchopneumonic type. In the presence of plague any swelling or abscess formation will arouse suspicion. During the past summer I was detailed to see a case which clinically presented a bubonic swelling in the region of the parotid. This was found to be an abscess of the parotid gland, from which the staphylococcus aureus was isolated, but no plague bacilli. No other cases developed.

The bacteriology of plague is confusing to those who have not had experience with real cases. It is not uncommon to find bipolar staining bacilli, which, in size and staining, lead one to suspect that a case of plague has been found. Some of these will kill guinea pigs or rats within the specified time. Here you must resort to inoculation of animals which have been immunized to plague, and such animals will behave the same as the non-immunes. Organisms of this nature can usually be excluded by the nature of their growth on salt agar and their action in the various sugar media. Some strains of plague bacilli show a decided variation from the text-book picture, in that they appear like small cocci in chains, not unlike streptococci.

Treatment of plague is largely of a prophylactic nature. So far as I know, there is no treatment other than the prophylactic. Sustaining and hygienic measures must be used the same as we do in all cases where we have no specific treatment. In this connection it is well to use certain antiseptics on open lesions where there is danger of infection from pustules and open buboes. Painting these with tincture of iodine, as is sometimes done with cases of smallpox, is advisable. Attendants should be immunized by vaccination. Darling doubts the value of anti-pest serum as a prophylactic. Persons attending cases of plague should wear gowns, gloves and a cap which is provided with a face mask.

A Russian physician, Samoilowitz, inoculated himself with pus from a bubo during an epidemic of plague in 1781. He developed a mild case of plague, with an uneventful recovery; and later, through a long period of exposure, remained well. Curetti, impressed by these results, adopted the same method of inoculating others, and of six persons inoculated all developed the disease and five died. The use of virulent organisms was consequently discouraged, and was not resumed until Albrecht and Gohn introduced the method of vaccination by means of attenuated cultures.

Further discussion of this subject can be more accurately made by Dr. Wilson, whose familiarity with, and knowledge of, the subject is greater than mine.

Dr. Graham E. Henson, Jacksonville, Fla.—In connection with the treatment of plague, I would say that the first treatment is, of course, from the standpoint of prophylaxis, and there is no treatment, aside from the prophylactic, so far as I know, that is of any great importance in connection with the plague, except ordinary sustaining and hygienic measures, such as we resort to in all cases in which we do not know what to do specifically. It might be interesting to mention some of the early experimentation in connection with this prophylactic treatment of plague:

A Russian physician, in December, 1700, conceived the idea of prophylaxis in connection with light cases in large epidemics there. He took some of the virus from a pustule on a plague patient and inoculated himself. He developed a mild form of the disease; and later, through a long period of exposure, he remained immune. Another man attempted to do the same thing, and five patients out of the six that he immunized died. Consequently, this side of the treatment was rather discouraging at that time and was dropped for the time being; and it was not until the day of Haffkine and the men connected with the Indian mission (I guess Dr. Wilson can tell more accurately about that than I can) that the plague vaccine was prepared as a prophylactic. The serum treatment I am not ready to make statements in regard to. It has been used with varying results. I think that Dr. Wilson is more competent to speak on this point than I.

Dr. J. S. Turberville, Century, Fla.—I should like Dr. Wilson, in closing the discussion, to go into the subject of the diagnosis of plague more fully. I have been practicing medicine in the State of Florida for seven years, and every year, in the late summer and early fall I have seen half a dozen cases of an inguinal adenitis, accompanied with fever. These cases all got well. There were no abrasions about the feet to account for these infections. They ran a course of twenty-one days to six weeks of a temperature not going above 101 degrees; and in these cases there has always been a great deal of periglandular infiltration. I have seen men try to excise the gland. They could do this all right, but the wound did not heal promptly. After exrecising, there is a long suppurating wound. Last year we had a case in a little girl, who had purpura at the same time. She had double inguinal adenitis, without any lesion anywhere that we could trace this infection to. Her purpuric spots were all over the body. A few weeks later her brother came down with the same thing; and, on account of being unable to keep him in bed, his glands suppurated. These glands rarely suppurate, if you keep the patients still; but this boy's did suppurate, and I made an incision and obtained a culture. At ordinary room temperature this developed in four days to a culture—a pure culture—of a coccus-like bacterium. This bacterium did not look like the staphylococcus, but more like that than like anything else with which I am familiar. I submitted it to Dr. Brink, bacteriologist of the State Board of Health, at Pensacola, and it turned out to be micrococcus tetragenus. All the cases ran about the same course, with a uniform temperature; so I think that this rules out septic conditions. I have seen a few cases in which the glands all over the body were affected. I do not remember to have investigated the spleen, and do not know whether the spleen was enlarged or not. These cases have been called by some typhoid fever, but they are not. In the last few cases the Widal was made, and they were not typhoid. I should like to ask Dr. Wilson to give us some information on this point of diagnosis, if he will. Thank you.

Dr. R. L. Wilson, Charleston, S. C. (Closing)—I will say only a word or two. First regarding treatment:

As a preventive for persons likely to become exposed to infection with plague Haffkine's prophylactic, a vaccine, has been used. It was used quite extensively at San Francisco in the first plague epidemic. I was inoculated myself. It has been considered of doubtful value and probably does not give protection for very long.

After the onset of the disease antipest serum has been often used, but with little favorable results. The treatment is largely symptomatic, as Dr. Hansen has mentioned. We have nothing that acts as a specific in plague.

With regard to Dr. Turberville's cases I would say that, of course, not having seen them I would not want to give much of an opinion of what they were. In several mild cases of bubo seen at Honolulu it was difficult to say whether there was plague infection or not. In the tropics tropical, climatic and other kinds of bubo are sometimes encountered that may not be caused by the plague bacillus. It may be that Dr. Turberville's cases were of one of these kinds and, again, they might have been cases in children. Were they?

Dr. Turberville—No; in adults and in children. More in adults than in children.

Dr. Wilson—In children, it is well to have in mind that the glands swell more easily than in adults anyway; and you get buboes from sepsis and other causes that would not produce glandular swelling at all in adults. Then, again, malaria, which has all kinds of symptoms, has caused such glandular involvement, but that is rare.

Dr. Turberville—The blood was examined carefully, and even the leucocyte count in many cases, an dthere was a slight leucocytosis.

Dr. Wilson—I did not mean to suggest that you had omitted it, but that you omitted speaking of it. I did not know what you had done.

PROPHYLAXIS OF PLAGUE.*

By J. E. Beck, Ph.G., M.D.
Mobile, Ala.

Plague is an acute, specific, infectious disease produced by the bacillus pestis of Kitasato and Yersin and characterized by high fever, great prostration, the appearance of bubos and a high mortality rate.

Clinically the disease appears in three forms: (1) The bubonic type in which the lymph glands are strikingly affected and become enlarged and tender, forming "bubos." hence the name; (2) the pneumonic type which is esssentially a very fatal

*Read before the Mobile County Medical Society, Mobile, Ala., October, 1912.

pneumonia produced by the bacillus pestis, and (3) the septicemic form in which the bacteria circulate in the blood in large numbers.

PROPHYLAXIS.

That plague is chiefly conveyed from rat to rat and from rat to man by the fleas is universally accepted as a fact. That the pneumonic form may be transmitted directly from man to man in the exact manner that tuberculosis is transmitted is also accepted as a fact.

In addition to rats and mice, quite a number of other animals have been proven capable of harboring the disease, some of which are the ground squirrel of California and other Western states, the wood rat, the cat, dog, mongoose, rabbit and guinea pig, and there is every reason to believe that the tree squirrel of the various states would become infected if exposed.

Prophylactic measures are naturally divided into, (1) prevention of the introduction of the disease from foreign countries; (2) prevention of its spread from state to state; (3) prevention of its spread within local limits; (4) protection of the individual who has been or may be exposed, and (5) treatment of the patient.

PREVENTION OF THE INTRODUCTION OF PLAGUE FROM A FOREIGN COUNTRY.

The measures adopted by the Public Health Service with this object in view are fumigation of vessels, cargoes, personal effects of passengers, and inspection of passengers themselves at foreign ports where plague is prevalent or liable to be constantly introduced. This foreign inspection service is supplemented by careful inspection of all vessels arriving at United States ports from suspicious foreign ports and the detention and isolation of suspicious cases and contacts and careful fumigation of the vessels from which a case has been taken. After fumigation the vessel is searched for rats and mice, and all found are examined to determine whether or not they are plague infected and all are afterwards burned.

The above are probably as rigid quarantine regulations as could be enforced without imposing undue burdens upon shipping, but they are not rigid enough to prevent the landing of a plague "carrier"—rat or man. These "carriers," or chronic cases, are not rare, especially among rats, and are important factors in spreading the disease. Kitasato probably had them in mind when he said, "Where ships go plague will go."

The rat with chronic plague is far more to be dreaded than the human "carrier," since he may leave the ship and spread infected fleas broadcast as he is chased from place to place by healthy rats until he finally dies and all the remaining infected fleas leave him and seek new hosts. He is especially dangerous in a port where there has never been an epidemic of plague and where wharf employes do not attach the proper significance to a high mortality rate among rats and do not know the danger to themselves from handling a dead rat, since he may start an epizootic which will become widespread and result in human cases before it is brought to the attention of the health authorities unless large numbers of rats are regularly examined. As a prophylactic measure of great importance we must therefore educate the public and wharf employes, especially, to the significance of a high mortality rate among rats, and must perpetually examine large numbers of rats in order that we may secure the infected one which may gain entrance. This is an expensive plan, but is vastly cheaper than to allow one human case to occur, for the cost of such a case to the city and commerce would far exceed the cost of maintaining an efficient rat survey several years.

PREVENTION OF ITS SPREAD FROM STATE TO STATE.

The methods necessary to adopt to prevent the spread of the disease from state to state are, protection of vessels engaged in the coastwise trade and the inspection and detention, when necessary, of railroad, stage coach, river boat and other travelers.

To protect vessels engaged in coastwise trade they are required to be fumigated every three months or oftener if necessary; they must "breast off" at least six feet, raise the gang plank at night and wear rat guards or load "in the stream" at infected ports. The rat guard considered sufficient is a funnel-shaped piece of galvanized iron measuring three feet in diameter, made in two pieces hinged together. In use the guard is clasped around the shore line in such a manner that its inner concave surface is turned toward the land so that a rat seeking to reach the ship by a shore line encounters the inner surface of the funnel. He is prevented from crawling through the funnel by its being carefully adjusted to the size of the line.

The above precautions are taken at the infected ports to prevent rats from reaching the vessel, but on arrival at a clean port the rat guards are reversed and used to prevent rats from leaving the vessel.

In 1900, when plague was present in San Francisco, Texas maintained a detention camp on the Southern Pacific Railroad, where it enters the western border of that state, and all passengers from California bound for points in Texas were detained to complete seven days from the time of departure from California. Today there is no pretense made by any of the states to maintain a land quarantine

against California, although plague has steadily spread from point to point until it is known to be present in eleven counties in that state. Yet it is thought there has never been a case *reported* in an Eastern state which was traceable to California. This history would seem to indicate that the East is safe from infection from California, but this feeling of security is not well founded, for it is probable that there *have* been cases introduced into Eastern cities from California and that they have been treated as cases of venereal bubos or have been recognized as cases of plague, but not reported as such. The precautions taken in any well regulated hospital to prevent the introduction of vermin (pediculi especially) into the hospital would serve very well to prevent the spread of plague by fleas, and a case of the bubonic type could be treated in the same ward with cases of venereal bubos, or the pneumonic types could be treated on the galleries with other cases of pneumonia without necessarily spreading the disease or exciting suspicion.

PREVENTION OF ITS SPREAD WITHIN LOCAL LIMITS.

Manson considers these more important than any other measures to be adopted, as will be seen by the following quotation taken from the 1910 edition of his book on Tropical Diseases. He says: "It is very questionable if in practice any system of rigid quarantine, no matter how carefully devised and theoretically perfect, is ever absolutely protective. . . . It must be combined with careful general sanitation . . . with the speedy discovery and isolation of the sick and with the wholesale destruction of vermin."

The above opinion is justified by the experience of the authorities in Honolulu, where plague was endemic for a time and was repeatedly introduced, but has long since been eradicated by a systematic, aggressive warfare on rats, and the early and effective isolation of cases.

The commercial bodies of Honolulu have made this possible by giving the medical profession their unstinted support, and for a number of years have contributed $400 per month to meet the expenses of trapping, shooting and poisoning rats. The rats are collected daily by men paid from this fund, they are tagged for identification and delivered to the Plague Laboratory, where each is autopsied and smears made from the spleen and any suspicious glands. Thousands of slides are examined without finding any suspicious organisms, but when such is found other smears are made from the same tissue, and if these also look suspicious cultures and guinea pig inoculations are made and the Board of Health notified of the suspicion. Without waiting for the diagnosis to be confirmed the "Board" takes *immediate* action. The house or building in which the rat was secured is immediately well guarded, the inmates are removed to quarantine for observation, the house is thoroughly fumigated and the premises given such a cleaning as to preclude the possibility of a rat escaping. The cleaning and overhauling is extended to the point of tearing out all wood flooring which is so close to the ground that a man cannot easily crawl under. These floors are replaced with concrete or with wood after the house has been raised clear of the ground. All ventilatory spaces around eaves and other openings not otherwise protected are then covered with wire screen to prevent the ingress of rats. All piles of lumber, rubbish and garbage which could harbor rats are carefully removed and the premises put in an irreproachable condition.

The above are the methods which have proven successful where enforced rigidly and have kept the city of Honolulu and the island on which it is situated free from plague for several years, even though it has been and is constantly exposed to reinfection. On one of the other islands of the group (300 miles distant from Honolulu) these measures have not always been heroically enforced and the result has been that cases appear frequently. Within the last few months several human cases have occurred on the island in question and the Board of Health is now applying the same vigorous measures which were successful in Honolulu. A recent Public Health report shows that they are examining over 2,000 rats and mongoose each week.

That one or more of the Gulf cities will in the near future become infected with plague is the opinion of the best authorities on the subject, and it is therefore imperative that the medical profession in these cities face the question squarely and impress the danger of the situation upon the commercial bodies and the general public, who will of necessity be required to furnish funds to carry out prophylactic measures. Secrecy and inactivity are most dangerous policies, as has been shown in the experience of a certain Western city where the authorities at first strenuously denied the presence of the disease and threatened personal violence to a Public Health Service officer for maintaining his diagnosis, and as a result millions of dollars have since been spent in efforts to eradicate the disease, which could have been controlled by the expenditure of a few hundred thousand in an honest effort to eradicate the foci in the beginning. It is truly a case where a stitch in time would have saved nine million, and let us hope that every Gulf city will take that stitch in time and thus save the community millions and the city's reputation.

Too much stress cannot be laid upon the necessity for prompt and vigorous action, since a delay

of a few hours gives the rat population a chance to migrate, and it has been the experience of those engaged in plague work that sickness among rats has a tendency to cause them to abandon the locality. The human population also always seems able to get some "inside information" unless they are quarantined within a few hours, and if they do get the information their personal inconvenience and liberty have more weight with them than the good of the community, and they will put as many miles between themselves and the suspicious locality as time permits.

Those places exposed constantly, as Mobile and other Gulf ports are, now that Cuba and Porto Rico, as well as a large number of South American ports, are infected with plague, should require all market places, butcher shops, feed stores, stables and other places likely to be especially attractive to rats to have cement floors and to be screened to keep out rats.

In general a persistent effort should be made to reduce the number of rats by killing them and by destroying their food supply and retreats. To this end poison should be distributed, traps set, garbage collected and burned, and buildings made rat-proof.

PERSONAL PROPHYLAXIS.

The person exposed or likely to be exposed should first observe those rules of hygiene which will secure for him the greatest measure of physical vigor. Specifically every person during a plague epidemic should either wear boots with closely fitting tops which reach to the knee, or should wear closely fitting leggins, and these should be sprinkled with kerosene daily as a protection against fleas. This is the practice in India and Hawaii among those engaged in plague work, including every one, from the laborer who cleans up the rubbish to the chief of the laboratory, and is considered a most valuable measure of protection. No dead rats should be touched with the bare hand, but should be lifted with a pair of long-handled forceps similar to coal tongs, or may be handled with gloves which fit snugly around the wrist over the sleeve and will keep out fleas. Always before a dead rat is picked up it should be saturated with kerosene to kill fleas. Laboratory floors and the floors of buildings supposed to harbor infected fleas should never be swept, but should be mopped with an efficient antiseptic fluid after a live guinea pig has been turned loose on the floor for some time. If there are any live fleas they will usually attach themselves to the guinea pig, which must then be chloroformed.

It is probable that under favorable conditions the disease can be contracted through the alimentary tract from food soiled with excreta from plague infected animals, and for this reason it is advisable to either eat well-cooked food or that which is beyond suspicion during an epidemic. A prophylactic injection of anti-plague serum should be administered to all who have been unduly exposed, as a degree of immunity is thus secured for a period of two or three months.

The patient should be treated in a vermin-proof isolation ward two or three feet above the ground; the ground under and around the ward should be paved with concrete to prevent flea breeding; the floor of the ward should be kept clean by mopping with a disinfectant solution such as 5 per cent crude carbolic acid, and the walls and furniture should be wiped off with the same solution.

The patient's sputum, urine and feces should be carefully collected and burned or disinfected with crude carbolic solution. The sputum of patients suffering from pneumonic form should be especially guarded, since it is highly infectious. The ward and patients' clothing and bedding should be disinfected with sulphur dioxide after the patient is removed. If the patient recovers he should be isolated in a non-infected ward with sterile clothing one month after the cessation of the symptoms of the disease. If he dies his body should be cremated if there is a crematory within a reasonable distance; otherwise it should be placed in a coffin and completely covered with "quick lime" and buried.

SUMMARY.

1. To prevent the introduction of plague from a foreign port:

(a) Inspect passengers and fumigate vessels and cargo at ports of departure.

(b) Repeat the above measures, if necessary, upon arrival of the vessel at United States ports.

(c) Detain the sick one month after recovery, and contacts seven days after last exposure.

2. To prevent its spread from state to state:

(a) Inspect and detain travelers.

(b) Protect vessels from becoming infected by using "rat guards," "breasting off" or "loading in the stream."

(c) Fumigate vessels regularly and at other times when indicated.

3. To prevent its spread within local limits:

(a) Early recognition and proper isolation of the first and all subsequent cases.

(b) War of extermination on rats, by trapping, shooting, poisoning and destroying food supply and breeding places.

(c) Fumigate and overhaul buildings and premises where a case is discovered.

(d) Rat-proof market places, butcher shops, stables and other haunts of rats.

4. Personal prophylaxis:

(a) Wear boots or leggins.
(b) Handle dead rats with tongs.
(c) Immunizing injections.
5. Treatment of the patients.
(a) Treat in vermin-proof ward.
(b) Ward floor to be mopped with antiseptic solution.
(c) Disinfect sputum, urine and feces.
(d) If he recovers isolate during one month after recovery.
(e) If he dies, cremate body or bury in "quick lime."

In the preparation of this article I have consulted Manson's "Tropical Diseases, 1910," Kelly's "Practice of Medicine," Coplin's "Manual of Pathology," and numerous "Bulletins" and Public Health Reports of the Public Health Service, but for the most part the article is based upon personal observations while in charge of the Plague Laboratory in Hawaii and the opinions of officers of the Public Health Service engaged in quarantine and laboratory work.

TOXEMIAS FROM ALCOHOL.

By T. D. Crothers, M.D.,
Hartford, Conn.

The disturbed mental condition that follows from the use of alcohol is distinctly traceable to toxins. These toxins are in a large measure due directly to spirits and their physiological action on cell and tissue. The action of alcohol resembles that of any other poison. The fact that it is complicated with other poisons frequently conceals this one fact.

There are no diseases in modern times that require such a close scrutiny of causes as those that are traceable to alcohol, and yet this cause is not recognized, only in the later stages, owing to the delusion that alcohol has some food value, and that it is a stimulant which builds up rather than tears down.

The most pronounced toxic condition from alcohol is delirium tremens, or alcoholic deliriums, following the excessive use of spirits. In 1813 Dr. Sutton, of London, described this disease and pointed out its peculiar action and its specific cause—alcohol—and yet twenty years elapsed before it was recognized in the text-books as a disorder requiring medical study.

From that time to the present the literature has been bewildering and the treatment confused, and even now what is called delirium tremens is regarded as a moral affection in many circles, and largely under the control of the will.

Modern literature divides diseases into many classes, and when alcohol has been used they are called alcoholic, and this very term enters into the treatment and brings in an element of willfulness and vice that has no support in any exact study.

The drinking man may have all sorts of inflammatory conditions and develop delusions from traumatisms and other particular causes in which the toxins from alcohol are supposed to play a very active part. The pathological changes which follow from acohol are as distinct and traceable as those which follow from injuries or germs. They follow along the same lines and are marked by symptoms that are not understood and are attributed to other causes.

The modern studies of alcohol and its physiological action confirm this. Alcohol acts first on the blood vessels.

The vasomotor nerves surrounding the arteries become paralyzed, and the heart is roused to greater activity to force the current of blood along its accustomed channels. The uniform dilatation and contraction of the blood vessels is broken up, and mechanical obstruction follows, and the heart labors to overcome this. This is noted in the increased heart action, followed by depression.

The congested blood vessels of the face and nose indicate the condition of the entire circulation. Following this, oxidization is diminished. Nutrition is not carried on uniformly, but in fits and jerks. The red blood corpuscles are diminished. The whole process of nutrition and circulation is deranged and slowed up.

Foods that are taken are not digested properly. Protoplasm is not distributed uniformly, and immense waste is accumulating all the time, and in these wastes toxins are formed which often concentrate around certain centers of the brain, and the mental derangements are simply symptoms of disturbances.

After a time the dentrites are shrunken and unable to carry impressions; hence sensations of pain, which eventually become inflammatory, and later are distinct neuritis follow.

Alcohol acts as an anesthetic, particularly on the cells and cell activity, slowing and finally destroying their action. Fortunately, this anesthesia is temporary and may be overcome and restored, but in the continuous drinker there is no period of reparation. Both cells and protoplasm become waste and are either thrown off or concentrated at different points as fibrinous growths.

There is a pathology in the toxins from alcohol that is verified and confirmed by experiments on animals. The same shrinking of the coats of the nerves and corrogation of the nerve cells, the same sclerosis and fibrinous deposits seen in animals

fed on spirits, are traceable in persons who have drunk continuously or at intervals and die from causes which are not referred to as due to alcohol.

Is there a distinct toxin which follows from the use of alcohol? There are various answers to this question. Experiments on protoplasm of both animal and vegetable cells give the most emphatic answers in the affirmative, and, while this particular toxin has not been separated, it is evident in a great variety of ways.

Eliminative measures will stop its growth, break up the symptoms. Treatment for persons intoxicated and persons obscessed with the desire for spirits are checked by eliminative measures—purgation, sweating, change of food, improved oxidization. Alcohols are not the same, either chemically or physically, and their action on the body differs. There are several groups of alcohols coming from distinct substances that are more anesthetic and paralyzant than others. There are some alcohols that have a local action on the heart, on the sensory and motor centers, and the symptoms vary widely, but it is still the same anesthesia and destruction of molecules.

There are some practical facts which ought to be recognized, and every practitioner can verify them. Alcohol is always an anesthetic and destroys protoplasm in a greater or lesser degree, or, at all events, suspends its activity. The various obscure affections which the physician is called on to treat occurring in persons who have used spirits as a beverage should suggest toxemias from alcohol as a cause, and a treatment based on this prognosis will often be very satisfactory.

Disturbances of the mind, manifest in delusions, deliriums and melancholia, should suggest some toxin, of which alcohol is the most common. Persons who have used spirits continuously will exhibit a variety of derangements that are directly traceable to this one cause; not only the removal of the cause, but a long, persistent course of improved nutrition, elimination and building up are necessary to overcome this.

Practical men assert with great positiveness that alcohol and syphilis are the two most active causes of a large proportion of diseases which come to the attention of the physician. Germ diseases are followed, in both of these conditions, with greater virulence and are more intractible in treatment.

In surgery the fact of having used alcohol makes a very different prognosis, and operators are very guarded as to the results of their work in such a case. Pneumonia occurring in persons who have used spirits has a fatality double and treble that of the ordinary cases, and the practical conclusion is that the use of alcohol has diminished the vitality and power of repair to the extent bordering close on fatality. There are, no doubt, alcoholic toxins present which explain this low vitality, and this is further confirmed in practice. Where spirits are removed and sharp eliminative measures through the skin and bowels are continued for a long time, a degree of restoration follows, which indicates at once the presence of toxic bodies.

Not unfrequently insomnia is due solely to this cause, and the active treatment along these lines indicate it beyond question. Practical men refuse to perform operations or give very favorable prognosis in persons who have used spirits. A case came under my care of sarcoma. The family physician decided that he must recover from the alcoholic disorder and be built up before the operation; otherwise it would be fatal.

He remained three months, recovered to a very large degree, went home and bore the operation, and now, several years afterwards, is still free from a return of the disease and is much better in health and vigor. The physician affirms that he did not wish to treat two different toxemias, one from cancer and the other from alcohol. If he could get rid of one, he might be able to check the advances of the other.

A very practical fact should be recognized when called to treat any form of alcoholic delirium—namely, to direct all treatment to elimination, and never try to cover up the delirium by narcotics. The common practice at present is to give chemical restraints, such as chloral, opium and a great variety of other drugs of the same class. These all complicate the toxic conditions and protract the disease and often make it fatal.

The old-time doctor who gave large doses of calomel and other purgatives, and frequently bled the patient, was using rational measures beyond any contention at the time, and even now these are hardly appreciated. The most perfect treatment possible along the best lines of rational science is the use of baths, salines, rubbing and restraint. A wild, delirious patient can be taken out in the country and walked about, given free access to active muscular exercise, then brought back, showered and rubbed and purged. When restlessness comes on again, put attendants with him and let him walk off this restlessness up to the point of exhaustion; then rubbing and restricted diet, and the progress of the disease toward recovery is very rapid. Where the surroundings will permit this outdoor treatment, the mortality should be very small. The present mortality rate—from 10 to 30 per hundred—reflects at once on the failure of the physician to

recognize the toxins and apply measures for their removal.

There is a great field of practical work and revolution in this direction that should be studied and cultivated.

PEDIATRICS.*

By William Weston, M.D.,
Columbia, S. C.

I have concluded, since this is a general meeting of medical men, to speak to you briefly of pediatrics—of some of its aims and a few of its accomplishments.

This is a comparatively new specialty, but one in which the opportunities presented are of such magnitude and of such far-reaching importance that already those who are laboring in this field are overwhelmed by the immensity of their tasks. Only a few years ago the word "pediatrics," which was coined by Lotch of Harvard, did not appear in any medical dictionary. Since then the interest in the subject has been so great that its meaning is well understood in every civilized land. Twenty years ago there did not exist a single medical college in which diseases of children were taught as a separate and distinct branch. Before that time it was attached to the chair of obstetrics or general medicine, where it received the most perfunctory attention, and it has only been about two decades that its importance has become so manifestly evident and universally recognized that it no longer has to struggle for an independent position. Today I know of no well-organized medical college that does not teach pediatrics as a distinct and prominent subject.

It is interesting and at the same time beyond the comprehension of those who live in this enlightened era to recall that even the greatest poets, Milton, Shakespeare, Goethe and all that illustrious company of poets to whom the world justly pays homage, seldom mention the word "child," and in none of their works does the subject rise to such importance and dignity as to warrant even a verse. Likewise have they been treated by philosophers and statesmen. You will recall that in the Roman Senate it was asserted by a member of that body that a man has the right to kill his own child, which claim had the sanction of law. But cruelty was not so much the wrong from which children have suffered as from ignorance and indifference. It was not until that tremendous wave of thought and light which characterized the last quarter of the nineteenth century brought to the attention of physicians the disgraceful neglect of children did they begin to find relief. Soon the spirit of investigation and research brought to light the deplorable fact that scarcely half the children born lived to reach five years of age. Statesmen interpreted this condition to be a menace to the State, humanitarianism proclaimed the condition an unwarranted shedding of human blood, and so children became a subject for serious thought and consideration, and now the child possesses a value for the first time since Christ's words of affection and reproof ceased to echo their benign sound, and so today we see many devoted men and women, both in and out of our profession, diligently laboring to make amends for the past by having enacted and enforced laws for their protection and preservation. Since such manifestations of interest on every hand have developed and the need demonstrated, it is only natural that from our profession would come those who would take up the work and assume the responsibilities incident to such duties.

The study of pediatrics is unquestionably one of the most interesting branches of medicine because it deals with that period of development in which functional activity is greatest, and during that period occur diseases which seldom or never occur in later periods of life. During the first year of life occurs the greatest development of the nervous system. The brain grows almost as much during the first year of life as during the rest of life. During early life the head and chest bear a definite developmental relationship to each other; the fontanels should close within a certain period. Dentition and many other steps in development—all have a special significance and should receive careful consideration if the aims of pediatrists are to be fulfilled.

Some of the more important aims are briefly as follows: Preservation of the race by studying the anatomy, physiology and pathology of infancy; the effects of heredity, of infant hygiene and of feeding. Only after thoroughly familiarizing ourselves with these elementary requisites can we successfully equip ourselves for the practice of pediatrics and be able to interpret symptoms in a rational and satisfactory manner. Then the pediatrist can justify his pretension by so lowering the mortality table as to be well within the bounds of reasonable expectancy.

I shall not attempt here to recite to you all the accomplishments of pediatrics, but shall mention only a few of the more important. I think unquestionably one of the geratest accomplishments has been to impress upon people the fact that the child had a

*Read before the Section on Medicine of the Southern Medical Association at the sixth annual session, held at Jacksonville, Fla., November 12-14, 1912.

right to live, and, in living, spend its infancy and childhood in comparative comfort, and by so directing and guiding its development that a normal balance was obtained between the physical and mental development, with the result that useful citizens free from bitterness and prejudice are given to society.

It may be counted somewhat of a triumph that the public has been convinced that children do not die as the result of an inscrutable Providence, but from certain demonstrable causes.

The results that have been obtained represent an amazing amount of work along many lines, but the accomplishments have been so great and have meant so much to humanity that men from every quarter of the world have been stimulated to increased effort, with the result that almost daily new discoveries are being announced and old ones verified. I regret that time will not permit me to give detailed accounts of the many important and interesting discoveries that justify the existence of this branch of medicine, and so I shall mention only a few that occur to me at this time, and a few of the men to whom the world owes a debt of gratitude—to Barlow and Cheadle, of England, for drawing a definite distinction between scurvy and rickets, and clearly defining the etiology, pathology, symptomatology and treatment of each; to Poynton, Paine and Cheadle for their masterly work on rheumatic fever, in which they clearly pointed out the almost constant presence of chorea and cardiac manifestations as symptoms and not complications of the disease. They clearly demonstrated that in this disease the articular manifestations were not by any means the first to present themselves, but that either of the other two or both may occur before it. It is to Cheadle's diplococcus, and not to the acid theory, that will probably be accepted as the cause of this disease. To Klebs, Loefler, Behring and O'Dwyer for their splendid work in unraveling the mysteries of diphtheria and robbing it of its terrors; to Weichselbaum, Flexner and Dunn for their work on cerebrospinal meningitis, the result of which enables us to promise complete recovery where before we merely watched for the end; to Finkelstein and Meyer for devising a satisfactory treatment for all that class of cases of common origin, such as intestinal fermentation, dyspepsia, decomposition, intoxication and infectious diarrhoea, which has annually claimed such an astounding harvest of deaths, and we have been so helpless to prevent. We must acknowledge gratitude to them for giving us the means of victory in their protein milk.

Finally let us come to those Americans to whom the whole world owes a debt of gratitude. I refer to Jacobi Rotch and Holt and their co-workers, for having put infant feeding on a scientific and comparatively simple basis, and thereby having rescued thousands of infants from starvation, often by those painful and distressing channels of malnutrition, marasuras or infantile atrophy. These men have been equally aggressive in directing our attention to the importance of infant hygiene, which we now recognize as essential to success.

I sincerely wish that time permitted me to further record the splendid achievements of those who are laboring in this field and whose work has been and is such a splendid tribute to the enlightment and progress of 20th century medicine, and so in closing, I am doing so with the knowledge that half the tale has not been told.

DISCUSSION.

Dr. J. Ross Snyder, Birmingham.—Dr. Weston's paper is an exceedingly interesting contribution to the number of good papers we have had in this section, and I do not think it ought to be passed over without the courtesy of some discussion, but I do not know just where to begin with it.

One of the most interesting ways by which the progress of pediatrics may be measured is by comparing the curricula of medical colleges a few years ago with that of today. Up to within the last two years the subject of pediatrics in medical colleges was assigned to the professor of medicine, and probably an hour or two devoted in the course of the season to lectures on that subject. Today the professor of pediatrics is recognized as a full professor in most of the medical colleges of this country, and his position is one of equal weight with any of his co-professors. I think we are just as proud of that accomplishment as we are of what we have done with the laity.

Dr. E. H. Pomeroy, Braidentown, Florida.—It seems to me, in Dr. Weston's enumeration of the lights who have guided us at home and abroad, the name of Ponfick should be mentioned, who, some fourteen years ago, called attention to the fact that in every grave case of disease of infancy coming to autopsy there was found purulent otitis media, and the work of Ponfick was confirmed by others since, including the rather masterly effort made by Dr. Meltzer, of Philadelphia. I may not be certain about the name, as my recollection of names is not very good, but during the first year of infantile life, the auditory canal is entirely different anatomatically from the auditory canal in the adult, and the finding of the tympanum is very difficult for one not accustomed to seeing it, but very easy for one accustomed to it, especially with a whiff or two of some anesthetic, and puncture of the membrane is followed usually by an immediate convalescence. In general practice, where we are treating children for pulmonary or intestinal disease, with high temperature, not infrequently there is spontaneous runture of the tympanum, and in a few hours the child apparently will be well, whereas before it seemed in grave danger. This same result is obtained artificially by a slight puncture of the tympanum in those cases, and the result is abundant compensation for any physician in general practice who will take the trouble to learn to find the tympanum, pref-

erably on the cadaver. After he has once mastered the technic of finding the tympanum, it is a very easy matter, and relief in the grave cases can be obtained quickly where there is inflammatory disease, and especially where the disease is due to pulmonary or intestinal disturbance. In the experience of Ponfick many of the cases of infants were diagnosed as pneumonia, many of them as enteritis, or enterocolitis, but at autopsy there was found but slight pulmonary involvement or very slight gastro-intestinal disease, not enough to account for death, but in every case there was found purulent otitis media.

Dr. Warren, Florida.—The great amount of attention that has been paid to the treatment of children in the last two decades is going to result in a material increase in the population without any unusual increase in the birth rate. The lives of the great number of children who formerly died are now being conserved. The population will increase in that way; the death rate is going to be lowered, and that will in a large measure correct the results of the decreasing birth rate from which certain countries are suffering now, and that others are worried over. The further development of the study of the treatment of infants will create renewed interest in this matter.

Dr. C. C. Bass, New Orleans, La.—We fail to recognize without serious thought the importance of a greater study and consideration of the diseases of childhood. It is quite important that we should recognize the very great difference in the constitution and the natural susceptibility or natural resistance of children to diseases to which adults are quite immune. We must, of course, also remember that adults are very susceptible to diseases to which children are quite immune.

Dr. William Weston, Columbia, S. C. (closing the discussion).—Any discussion of the progress of pediatrics would fall far short of the mark if stress was not laid upon protein milk, which was given to the world about two years ago by Finkelstein & Meyer, of Berlin. Since that time it has been used practically all over the world. Just three weeks ago I asked Dr. Holt in New York what has been his experience in its use; he said he was satisfied with it and believed it was the best treatment when indicated. Dr. LaFetra, who is in charge of the pediatric section at Bellevue, gave the same experience. Many other doctors of Baltimore, Boston and elsewhere certify to its efficiency.

If you desire to know what protein milk is, and if any of you are not familiar with the subject, I will be glad to tell you. Protein milk is made in this way: Take one-half quart milk, heat to a temperature of 100 degrees F., dissolve two junket tablets in a little water and add to milk; when the milk curdles strain off the whey, and then you pass the curds through a fine seive by the aid of one pint of sterilized water at least five or six times, or until you get a homogeneous mass; then when you have finished that add one pint of buttermilk. The caloric value of this mixture is about 370. This is fed in the place of ordinary milk. You will find that it will check and cure the most obstinate cases of intestinal indigestion, but a child will not thrive on that milk for a very long time, and so it becomes necessary to raise the caloric value by gradually adding some preparation of malt sugar. The efficiency of this milk is due to the fact that the salts and sugar of milk have been gotten rid of, and, of course, the addition of lactic acid is a positive therapeutic agent.

SCLEREMA ADIPOSUM WITH REPORT OF CASE.*

By J. Ross Snyder, M.D.,
Birmingham, Ala.

Sclerema adiposum, a condition characterized by induration of the skin and of the sub-cutaneous fat, is not infrequently seen in the foundling and the lying-in hospitals of continental Europe, but is of exceedingly rare occurrence in England and in the United States. Holt says that following the discussion of a case reported by Northrup to the American Pediatic Society, in 1889, scarcely a dozen cases could be recalled by those present. The condition is one that is seen chiefly in very feeble infants in the first days of life, but may occur in older infants. Prematurity, atelectasis, inanition, syphilis, diarrhea, or any disease or disorder causing waste and exhaustion may be followed by sclerema.

Not infrequently a very low axillary temperature, 90 degrees F., or even so low as 70 degrees, has been recorded in this condition. Sclerema was once believed to be due to a solidification of the subcutaneaous fat following a marked drop in the temperature of the body. The hardened tissues, however, so interfere with the peripheral circulation that a low temperature results from rather than causes the sclerematous condition.

The skin in Northrup's case was injected and studied microscopically, but with negative findings. According to Still, there is atrophy of the fat cells and either a real or an apparent increase of subcutaneous fibrous tissue.

The condition in its earliest stage is apt to be overlooked, but in the course of a very few days the areas of involvement with their characteristic symptoms become too numerous to permit longer ignorance. The feel of the indurated skin and tissues is strikingly peculiar. The hardening may occur first in the back, in the cheeks, in the buttocks, in the extremities, or in any part of the body in which adipose tissue abounds. No matter where the induration first occurs, it is likely to spread rapidly and frequently symmetrically. The genital organs, the eyelids, the palms of the hands, and the soles of the feet usually escape. The involved areas, for the most part, coalesce, but other areas are cir-

*Read at sixth annual meeting of Southern Medical Association, Jacksonville, Fla., November 12-14, 1912.

cumscribed. The hardening becomes more and more marked until the tissues, in resistance and in temperature, feel like marble. Northrup likened the feeling to that of a half frozen cadaver. The body of the patient is stiff and rigid. Suckling may become impossible. The buttocks may be so closely approximated and so hardened as to obstruct the anus. The skin over the involved areas assumes a pale bluish color. On pressure, there is no pitting, but the color returns very slowly. All the vital functions may be performed with great weakness. The radial pulse is frequently not felt. Respiration is shallow and irregular. The cry is feeble and whining. Death usually takes place in from three or four days to a week.

Although the prognosis is generally bad, several recoveries have been reported. To the latter series I hope that I will be able to add the following case, which I am permitted to report through the courtesy of Dr. J. D. Bancroft, East Lake, Alabama, with whom I saw the case in consultation:

CASE OF BABY N.

White, male, five weeks old, seen November 7, 1912.

Family History.—Negative as to syphillis, tuberculosis, rheumatism, alcoholism, and malaria. Parents American born. Father's age, thirty-six years; mother's age, thirty-five years. Both in good health. Three other children, all living and well. Well-to-do family, living under good economic and hygienic conditions.

Previous History.—Normal pregnancy. L. O. A. presentation. Labor of short duration. Cord was around baby's neck. Asphyxia palliad, partially resuscitated by spankings and baths; baby, however, did not cry for three or four days after birth. During the first sixty hours of life the baby had repeated clonic convulsions. Hot mustard baths were used to control the convulsive seizures. These convulsions have not recurred since the fourth day after birth. Milk was abundantly secreted on the fourth day. The baby nursed feebly at first, but nursing has become more and more vigorous. The stools became normal, golden, yellow, on the seventh day and have so remained. Baby weighed eight pounds at birth, but no other reckoning of weight has been made. When thirteen days old several discrete blister-like eruptive spots (Pemphigus) were discovered over the baby's body. Six to eight of these blisters were noticed. These healed rapidly and without treatment.

Present History.—When eleven days old, while the baby was undressed for the bath, a hardened condition of the skin on the shoulders and on the fatty roll of the neck was noticed for the first time. This induration spread rapidly over the baby's back, to and over the buttocks, over the posterior thigh and leg. The parents were inclined to the belief that the early spankings and the hot baths had given rise to this condition.

My first opportunity of examining the child did not present until twenty-three days after the condition was first discovered. To the examining fingers the back, over the areas involved, was absolutely boardlike in hardness. The buttocks were so closely approximated and so resistant that a thermometer was inserted into the rectum with some difficulty. In addition to the indurations already mentioned, either cheek felt as though a marble of fair size was inbeded therein. Circumscribed hardened areas of varying sizes were felt in the skin of the arms and on the anterior surfaces of the thigh. No hardening was discovered in the skin on anterior chest or on the abdomen. The color of the skin over the buttocks was pale, bluish-pink. Over some of the other areas the skin was pale. The lips, the ears, the forehead, the chin, the fingers, and the toes were all of good color. The breath of the infant was warm. The mucous membranes of the mouth red. The pulse was only faintly perceptible, but to the stethoscope the heart's sounds were good. The baby had a good appetite and nursed well. The cry was lusty. The respiration was not shallow. Rectal temperature, 99 degrees F. No new areas of involvement had been discovered for several days past. The first area involved, between the shoulders, was noticeably softer than the tissues that suffered later.

Prognosis.—Because of the improved general condition, because of the length of time that had intervened since the onset, and because of beginning softening in the area of first involvement, I felt justified in giving a favorable prognosis. I sincerely trust that in this I will be sustained by the course of later events. Whatever the outcome, the section will be informed through the pages of the Journal.

DISCUSSION.

Dr. Henry Green, Alabama.—I am sure we are all greatly indebted to Dr. Snyder for the report of this interesting case and the description of the disease, and I would like to ask him in closing as to whether sensation in the affected parts is impaired or not, and whether there is any treatment for this disease?

Dr. J. Ross Snyder, Birmingham, (closing the discussion).—In answer to Dr. Green's question, I will say that in those areas in which the tissues have become stiff and rigid the reflexes are considerably obtunded and sensation seems to be affected.

The treatment is to keep up the general nutrition of the child, which in this particular case is being done by the mother better than any doctor could have done it on account of the breast feeding. The

other part of the treatment is artificial heat, which should be kept up, and that advice is usually not necessary, at least I have found it very seldom necessary in most of our southern homes. They keep up too much heat all the time, and in the case of a premature child I very seldom find it necessary to use an incubator in this part of the country.

NOTE. February 15, 1913.—The infant has made a complete recovery. The hardened areas have entirely absorbed. Dr. Bancroft, the family physician, reports that the softening and absorption were rather rapid considering the marked hardening of the tissues at the time of my visit. Three weeks after my examination nothing abnormal was detected in the feel of the tissues. The baby has constantly gained in weight and vigor. J. R. S.

MALARIAL HEMOGLOBINURIA—REPORT OF CASE.

BY ALBERT HAND, M.D.,
Shubuta, Miss.

G. C., female, white, aged 9 years. Has had chronic malaria with anemia amounting to almost cachexia for two years. A previous hemoglobinuric attack of moderate severity in August, 1911.

January 31, 1912: After a malarial paroxysm two days previous, which was untreated, patient had a severe chill with immediate hemoglobinuria. Nausea severe, anemia marked, very restless and with all symptoms of ordinarily severe malarial hemoglobinuria. The usual calomel was given, and although the blood showed no plasmodia, quinine five grains every six hours was begun, ten grains being retained by the aid of morphia during the night. By the next day the calomel had acted well, the urine cleared up readily, but the anemia increased, reaching on the second day a death-like pallor; temperature 97.4 and condition comatose.

February 2: Blood count—Small lymph 4, large lymph 4, polys 64, eosin. 4, trans. 7, leucocytosis marked, color index apparently normal; no plasmodia.

Quinine was continued, six grains by needle, every twelve hours. Condition steadily improved during the next few days, but the anemia remained severe.

February 6: Blood count showed, lymph 39 per cent, poly. 52 per cent, marked leucocytosis, relation of red to white cell 6:1.

Patient complaining of hepatic pain, no icterus, nausea not marked. Given more calomel and quinine contained by mouth every twelve hours, and iron begun.

February 8: At 5 p.m. hemoglobin was 10 per cent, respiration sighing, semi-delirious, eyelids, face and hands edematous, mucous membranes blanched, and skin of a dull leaden cyanotic color. In two hours there began twitching of right arm and forearm, frequent, clonic, and of increasing severity; tossing delirium, shallow, sighing, respiration; pupils equal, dilated wide and no reaction to the light. To all appearances the patient was rapidly dying. This localized convulsion lasted for two hours and gradually abated. By morning it had ceased altogether, but the whole right arm and shoulder showed complete motor paralysis with sensation much diminished. The patient's general condition slowly but steadily improved, and in two days motion began gradually to return; in forty-eight hours more she was able to move the arm a bit unsteadily. By this time, February 12, the hemoglobin had increased to 50 per cent, leucocytosis had decreased to 30,000. Ten days later motion was good in right arm, but muscles were weak and patient used left hand almost entirely. Condition of right arm returned to normal about March 1, three weeks after the onset of the paralysis.

In the previous hemoglobinuric attack quinine had been given six hours previous; in this attack no quinine had been given for fourteen days previous.

Quinine was given during this attack in moderate dosage. It has seemed not to aggravate the hemogobinuria, and the urine as usual cleared up under its use.

In this patient the leucocytosis was marked and the anemia most severe for recovery; the white count reached 80,000, red count 500,000, hemoglobin .10 by Talquist's scale, color index .90.

The transient paralysis was probably due to a localized edema of the brain, a part of the general edema; simple anemia should have recovered earlier; thrombosis not so readily and completely.

A REVIEW OF 131 CASES OF PELLAGRA.

BY B. E. M. GREEN.
Clinical Director, Georgia State Sanitarium,
Milledgeville, Ga.

To the general reader statistics are uninteresting, but as a good part of the literature of pellagra sets forth merely the theories of the individual writer, and has so far added little to our knowledge of the disease, it may be that the collection of facts in regard to a large number of cases will in time be of some practical value to investigators of a disease which has in recent years become a menace to the population of our Southern States.

The 131 patients who form the basis of this study were admitted to the Georgia State Sanitarium within the past twenty months, all of them being insane. A number of them refused to co-operate

in the examination, while others were actively restive to all the applied tests, so that in some cases the objective symptoms only could be noted, the examination in other respects being unsatisfactory.

The greater number of these patients were suffering from a first attack of pellagra, though many of them had passed through one or more attacks previously, and one was said to have had an attack annually for the past ten years. Only in a comparatively few instances was it possible to obtain information regarding former attacks.

The duration of pellagra was given in less than one-half of the cases, while in only 39 per cent was the duration of both pellagra and insanity stated.

In the following tables under the heading, "Circumstances," the term "poverty" is used to designate a condition in which food and clothing are uncertain or deficient; "comfort" applies to wage-earners, or to those who have sufficient for the day, but who accumulate nothing; "affluence" includes those who have acquired sufficient property to keep them from want for a time, even though their income ceases:

GENERAL STATISTICAL SUMMARY OF 131 CASES OF PELLAGRA ADMITTED TO THE GEORGIA STATE SANITARIUM FROM JANUARY 1, 1911, TO SEPTEMBER 1, 1912.

Race and Sex.

White males	30
White females	44
Colored males	13
Colored females	44
	131

Nativity.

Alabama	1
Florida	1
Georgia	116
Michigan	1
Massachusetts	1
North Carolina	2
South Carolina	9
	131

Civil Condition.

Single	25
Married	86
Widowed	13
Divorced	1
Separated	5
Unknown	1
	131

Occupation.

Agricultural pursuits	68
Professional service	2
Domestic and personal service	26
Trade and transportation	11
Manufacturing and mechanical pursuits	19
None	2
Unknown	3
	131

Circumstances.

Poverty	29
Comfort	62
Affluence	23
Unknown	17
	131

Age.

Average age	37 years
Youngest	16 years
Oldest	69 years
Under 20 years	5
20 to 25 years	17
25 to 30 years	18
30 to 35 years	22
35 to 40 years	14
40 to 45 years	12
45 to 50 years	15
50 to 55 years	10
55 to 60 years	9
Over 60 years	8
Age unknown	1
	131

Duration of Pellagra (57 cases).

Average duration	10 months, 20 days
Shortest duration	5 weeks
Longest duration	8 years
1 to 2 months	1
2 to 3 months	4
3 to 4 months	2
4 to 5 months	4
5 to 6 months	4
6 to 7 months	10
7 to 8 months	6
8 to 9 months	2
9 to 10 months	4
10 to 11 months	1
11 to 12 months	0
12 to 15 months	8
15 to 18 months	0
18 to 24 months	2
2 to 3 years	5
3 to 4 years	1
4 to 5 years	1
8 years	2
	57

Duration of Insanity (120 cases).

Average duration	7 months
Shortest duration	7 days
Longest duration	8 years
Under 1 month	14
1 to 2 months	27
2 to 3 months	13
3 to 4 months	16
4 to 5 months	6
5 to 6 months	4
6 to 7 months	11
7 to 8 months	3
8 to 9 months	3
9 to 10 months	2
10 to 11 months	2
11 to 12 months	0
12 to 15 months	5
15 to 18 months	3
18 to 24 months	3
2 to 3 years	2

3 to 4 years	3
4 to 5 years	1
5 to 6 years	1
8 years	1
	120

Given Duration of Both Pellagra and Insanity (51 cases).

Average duration of pellagra. 11 months, 20 days
Average duration of insanity. 3 months, 21 days

Complications.	
Arteriosclerosis	10
Bronchitis, chronic	1
Cardiac valvular disease	14
Drug habit	1
Emphysema	1
Nephritis, chronic	3
Pulmonary tuberculosis	25
Syphilis	9
Thyroid enlargement	4
	68

Termination.	
Death	70
Recovery	15
Recovery, mentally improved	8
Recovery, mentally unimproved	18
Removed, unimproved	3
Remaining under treatment Sept. 1, 1912	17
	131

Type of Psychosis.	
Infective-exhaustive	71
Manic-depressive	16
Dementia praecox	14
Paretic	5
Melancholic	3
Undetermined	22
	131

Subjective Complaints.	
Headache	42
Vertigo	31
Weakness	28
Pain	22
Formication	16
Numbness	18
Nervousness	17
Illness	8
Indigestion	6
Praecordial distress	12
Hot and cold flashes	3

Impairment of Special Senses.	
Vision	7
Hearing	16
Smell	25
Taste	9

Cutaneous Sensation.	
Hypesthesia	5
Hyperaesthesia	9
Anaesthesia	3
Astereognosis	3
Temperature sense impaired	11

Muscular Disturbance.	
Atrophy	1
Weakness	74
Rigidity	10
Twitching	13
Contracture	4
Inco-ordination	23
Spasm	4
Athetosis	2

Reflexes.	
Deep—	
Increased	91
Diminished	10
Absent	3
Superficial—	
Increased	12
Diminished	4
Absent	6
Pupillary reaction to light and accommodation—	
Sluggish	17
Absent	2
Consensual—	
Sluggish	5
Absent	2
Pupillary inequality	4
Pupillary irregularity	4
Tremor	90

Ankle Clonus.	
Both sides	10
One side	1
Convulsions	5
Bladder and Rectal Sphincters Uncontrolled	33
Tenderness Over Nerve Trunks and Muscles	9

Romberg Sign.	
Babinski Sign.	
Both sides	6
One side	1

Gait.	
Unsteady	31
Spastic	3
Hemiplegic	1
Feeble	12
Unable to walk	7

Speech.	
Nasal	8
Indistinct	4
Slurring	26
Drawling	10
Sticking	24
"Disturbed"	13

Disturbance of Emotion.	
Depression	54
Exaltation	16
Apathy	22
Irritability	14
Excitement	16
Apprehensiveness	55

Disturbance of Thought.	
Retardation	25
Flight of Ideas	8
Distractibility	6
Incoherence	18
Irrelevance	6
Confusion	45
Unproductiveness	14
Change of personality	5

Disturbance of Will.	
Restlessness	46
Violence	21
Destructiveness	15
Negativism	26

Mutism	13
Catalepsy	7
Stereotipy	8
Impulsive acts	4
Miscellaneous Symptoms.	
Stupor	3
Volubility	13
Boisterousness	18
Mumbling	8
Suicidal tendencies	24
Inacessibility	19
Disorientation.	
For place	3
For time	14
For person	1
For time and place	6
For time and person	3
For place and person	1
For time, place and person	59
Impairment of Memory.	
For recent events	23
For remote events	9
For recent and remote events	53
Retention.	
Impaired	66
Lost	27
Attention.	
Impaired	48
Lost	7
Grasp on School Knowledge and General Information.	
Impaired	42
Much impaired	33
Counting.	
Impaired	38
Lost	11
Calculation.	
Impaired	50
Lost	23
Insight.	
Partially preserved	39
Lost	60
Judgment.	
Impaired	45
Much impaired	63
Hallucinations.	
Visual	9
Auditory	28
Visual and auditory	47
Delusions.	
Expansive	6
Depressive	26
Persecutory	53
Somatic	3
Of influence	7
Character not stated	6

SOME OBSERVATIONS ON ACUTE PANCREATITIS—WITH REPORT OF FOUR CASES.*

By Stephen H. Watts, M.D.,

Of Charlottesville, Va., Professor of Surgery in the University of Virginia; Surgeon-in-Chief to the University of Virginia Hospital.

Although acute pancreatitis with fat necrosis was first described by Balser in 1882, it was not until the appearance of Fitz's classical papers in 1889 that the interest of the medical world was aroused, and inflammatory diseases of the pancreas began to be studied clinically and in the laboratory. Inasmuch as such cases are rather rare, animal experimentation has proved of the greatest benefit in elucidating many problems connected with them. This is particularly true of the acute inflammation of the pancreas, for the chronic conditions do not lend themselves well to animal experimentation. Our knowledge of chronic pancreatitis is, therefore, largely the result of observations made at the bed side and in the course of operations upon the biliary apparatus.

Etiology of Acute Pancreatitis.—Acute haemorrhagic pancreatitis occurs more frequently in men than in women, the proportion being about two to one. With few exceptions the disease occurs between the ages of twenty and fifty years; obesity and alcholism are believed to favor its occurrence. About 1901 Opie, whose name is prominently associated with our knowledge of all conditions affecting the pancreas, performed an autopsy upon a case of acute pancreatitis, which had been operated upon by Halsted, and discovered in the ampulla of Vater a small gall stone, about 3 mm. in diameter. If we recall the anatomy of the pancreatic ducts and the common bile duct, we will find that in a large number of cases, perhaps forty per cent, the duct of Wirsung joins the common duct in the ampulla a few millimeters above the papilla. In Opie's case the stone was large enough to occlude the opening of the common duct at the papilla, but not sufficiently large to, at the same time, occlude the opening of the duct of Wirsung. Inasmuch as Opie found the pancreatic ducts somewhat distended and bile stained, opening of the ampulla of Vater into the intestine and had caused a retrojection of bile into the pancreas, the acute pancreatitis resulting; moreover he showed that a typical acute pancreatitis could be produced in animals by the injection of bile into the he concluded that the small stone had occluded the

*Read before the Alabama State Medical Association at Birmingham, Alabama, April 18, 1912.

pancreatic ducts, just as it had been shown by Flexner and others that the injection of various substances, such as artificial gastric juice, dilute acids, oils, etc., would produce an acute pancreatitis.

The physiologic investigations of Pawloff and his pupils have shown that under normal conditions the pancreatic juice is inactive, but is activated by enterokinase, by which trypsinogen is changed to trypsin. When this occurs within the gland digestion takes place and the enzymes are liberated into the gland and surrounding tissues, extensive necrosis resulting. Among other substances in the body, which seem to be able to activate the pancreatic juice are: the duodenal contents, bacteria, blood serum and bile, especially when infected. Polya has called particular attention to the important part played by bacteria activating the pancreatic juice in cases of acute pancreatitis.

Since the above case was published by Opie, several other cases have been reported in which almost identical conditions were found. In one of my own cases a small stone was found occluding the outlet of the ampulla. A larger number of cases have been reported in which acute pancreatitis has been associated with gall stones in the gall bladder and in portions of the common duct other than the ampulla. In a large series of cases of acute pancreatitis colected by Egdahl, gall stones were found in forty-two per cent of the cases and in fifty per cent of a series of forty-four cases, recently reported by Korte, disease of the gall passage was present. In a certain number of cases the duct of Wirsung enters the intestine independently and does not join the common duct, and in such cases the presence of gall stones is probably not of so much importance in the production of acute pancreatitis. Pancreatic stones are sometimes the cause of acute pancreatitis. According to Egdahl, gastro-intestinal disorders are, next to gall stones, the most important cause of acute pancreatitis. In his series of cases thirty-two or thirty per cent belong to this group and seventeen of the thirty-two cases gave a history of alcholism. He thinks that perhaps the gastroduodenitis may cause an occlusion of the papilla of Vater and a retrojection of bile into the pancreas.

Acute pancreatitis may be caused by a good many other conditions, such as typhoid fever, mumps, trauma, gastric ulcer, appendicitis, syphilis, etc. We are not surprised that typhoid fever may be a causative factor in the production of acute pancreatitis as we all know the proneness of typhoid bacilli to lurk in the gall bladder and bile passages even many years after the attack of fever. Moynihan has recorded a case of acute pancreatitis in which typhoid bacilli were found in the pancreas. A good many cases have been reported in which mumps was complicated by acute pancreatitis and this is not surprising when we consider the similarity of the structure of the pancreas to that of the salivary glands, in fact, the pancreas is called by the Germans the abdominal salivary gland. In such cases the symptoms are usually milder than in other cases of acute pancreatitis and a good many have recovered without operation.

The organism most commonly present in acute pancreatitis is the bacillus coli communis, as we would expect, since it is a normal inhabitant of the intestinal tract; next in frequency are the streptococci and staphylococci. It is not definitely known how these organisms gain access to the pancreas, but it seems undoubtedly true that they sometimes pass from the bile passages into the pancreatic duct, sometimes directly from the intestine into the pancreatic ducts, sometimes by the blood vessels and lymphatics or directly through the intestinal wall into the pancreas.

Pathology of Acute Pancreatitis.—The pancreas, involved in acute pancreatitis is usually found to be greatly swollen and its consistency is sometimes softer than normal, especially where the hemorrhagic infiltration and necrosis are extensive. It presents a dark reddish, mottled appearance and, on microscopic examination, we find areas of necrosis, which stain poorly with the aniline dyes. About these necrotic areas there is a zone of inflammation and scattered through the involved gland there are more or less extensive areas of hemorrhagic infiltration.

There has been a good deal of discussion regarding the relationship between pancreatic apoplexy, the ultra-acute cases of Mayo Robson, and ordinary hemorrhagic pancreatitis, and the question is not yet definitely settled. Some think hemorrhage can take place without previous inflammation, others think that inflammation always precedes the hemorrhage. It seems to me that in certain rare cases the hemorrhage may be due to the rupture of an arteriosclerotic vessel without previous involvement of the pancreas, but in most of these cases we are dealing with a very acute pancreatitis, the digestion of the vessel walls giving rise to the marked hemorrhage. Draper, of Boston, has called particular attention to this so-called pancreatic apoplexy as a cause of sudden death.

The fat necroses which accompany acute pancreatitis are of considerable interest. It is now shown that they are due to the presence of the fat splitting ferment, steapsin, in the tissues and Flexner has proved the presence of steapsin in these areas of fat necrosis. These areas present a peculiar yellowish white appearance and are really areas of saponification, as the neutral fat is split into glycer-

ine and fatty acid, the latter combining with calcium in the tissues to form soap. They are of considerable importance, as their presence in the course of an operation always points to trouble in the pancreas.

The bloody fluid in the peritoneum in cases of acute pancreatitis is of considerable importance, as it has been shown by Doberauer and Guleke to be quite toxic. They have produced death in animals by the injection of this fluid and Guleke considers its toxicity to be due to the presence of trypsin.

Symptonms of Acute Pancreatitis.—One of the most striking symptoms of acute pancreatitis is the acute agonizing pain in the epigastrium, which is so extreme that it may rapidly bring on collapse and may actually cause syncope. It is more or less constant, but may be paroxysmal; it tends to remain in the epigastrium, but may radiate to the left. Vomiting soon occurs and is so persistent that, together with the obstinate constipation, it has frequently led to the mistaken diagnosis of intestinal obstruction. The constipation is almost absolute, though enemata may bring away a little gas. If the patient survives the acute stage and passes to the subacute, diarrhea may follow the constipation. Distention of the abdomen is a prominent feature in this disease and first appears in the upper abdomen, as in one of my cases where it seemed to be due to the direct effect of the inflammatory products upon the transverse colon, but later the distention becomes general. Tenderness is present in the upper abdomen, but the tenderness and rigidity are usually not extreme. The character of the pulse may be of value in the diagnosis of this disease as it becomes rapidly weak and small. The temperature is not of a great deal of significance; it may be normal, subnormal or elevated to 103 or 104 degrees. In the very acute cases it is apt to be normal or subnormal, whereas in the subacute cases it is likely to be high.

The various functional tests for disease of the pancreas are, generally speaking, not very satisfactory and are chiefly applicable in the chronic affections of the gland. These methods have been fully discussed by Pratt in an article appearing in a recent number of the American Journal of the Medical Sciences. He thinks the much discussed Cammidge reaction is almost worthless, but believes that recent observations on the occurrence of large amounts of diastase in the urine in acute pancreatitis give foundation for the hope that the determination of the diastase in the urine may prove of great aid in the diagnosis.

Glycosuria is infrequent, as we would expect when we consider that the entire gland is not often involved; it was found in none of my cases. The finding of fat and undigested muscle fiber in the stools is of some importance. The stools are sometimes voluminous, due to the large amount of undigested material, and whitish in color, the color being due to the absence of pancreatic fluids, whose action upon the bile pigments normally gives color to the stools.

Death usually occurs in from two to five days from collapse, though in the less acute cases life may be prolonged or recovery may even take place.

There has been considerable discussion regarding the cause of death in acute pancreatitis. The theories of shock, due to the involvement of the solar plexus and of sepsis do not hold. It has been shown that it is due to a toxemia. For a time it seemed as though Hess were right, when he maintained that the toxemia in pancreatitis was due to the formation of soap and its absorption. By injections of oil and paraffin he produced a picture very similar to that of pancreatic apoplexy. This view was, however, challenged by Guleke and v. Bergmann, who showed by their experiments with implantation of the gland, that the toxic substance is in the gland itself, apparently in the trypsin, for the commercial trypsin of Grubler has the same effect: moreover they found that after previously immunizing an animal with trypsin, the production of pancreatic necrosis was not necessarily fatal. Doberauer, who in general holds this view, does not, however, think that the toxic substance is in the healthy gland, but that it is a product of the decomposition of the gland cells, caused by the self-digestion, which occurs in acute pancreatitis. It seems that Guleke and v. Bergmann now agree with Doberauer, and think that the toxemia of acute pancreatitis is due to the absorption of the products of cell decompostion, caused by self-digestion.

Diagnosis of Acute Pancreatitis.—The diagnosis of acute pancreatitis is difficult, as the symptoms at first are only characteristic of a peritonitis beginning in the upper portion of the abdomen. It seems to me that this peritonitis is chemical and not infectious in the early stages of the disease. If we bear in mind the pancreas, when we meet with a stormy process in the upper abdomen, suggesting a perforative peritonitis or high intestinal obstruction, more cases of acute pancreatitis will be correctly diagnosed.

In general the differential diagnosis must be made from intestinal obstruction and peritonitis, resulting from a perforated gastric or duodenal ulcer, a ruptured gall bladder or appendix. The diagnosis is often impossible and is of consequence chiefly in regard to the nature of the incision as all of the above conditions demand operation. After the incision is made the presence of the sero-sanguineous fluid in the peritoneum and disseminated fat necroses

clinches the diagnosis. However, a previous history of gastric disturbances with acid eructations or the vomiting of blood, together with extreme tenderness and rigidity in the upper abdomen, a rapid obliteration of the liver dulness, due to the presence of free gas in the peritoneal cavity, and perhaps a higher temperature and leucocytosis than in the usual case of acute pancreatitis, would indicate a perforated gastric or duodenal ulcer.

In case of intestinal obstruction the pain would probably be more paroxymal in character, quite severe, but probably not so severe as that of acute pancreatitis and whereas the collapse is rapid in acute intestinal obstruction it hardly comes on so rapidly as in acute pancreatitis. Moreover on careful observation peristalsis will probably be seen in acute obstruction, whereas it is not present in acute pancreatitis, as here the obstruction is adynamic in nature.

The history of the case, with a careful examination of the patient, will often permit us to distinguish between a peritonitis resulting from the rupture of an appendix or gall bladder, and an acute pancreatitis.

Subacute Pancreatitis or Pancreatic Abscess.—These conditions are of especial interest, as they are particularly amenable to surgical treatment. They really represent the later stage of an acute pancreatitis which has probaly had an onset just as acute as those which we have previously discussed, but, as a rule, the symptoms are not so severe. The patient survives the acute attack, but he continues to complain of gastric disturbances, has more or less pain in the epigastrium, runs a temperature and gradually loses ground. Examination may show the presence of a tender tumor in the epigastrium.

Treatment of Acute Hemorrhagic and Gangrenous Pancreatitis.—Although the question as to the best treatment of acute pancreatitis has been freely discussed in recent years, it is not yet settled. Many surgeons are still averse to early operation, arguing that, inasmuch as the results of operative interference are more favorable after the formation of a localized abscess, one should wait until such an abscess forms before operating. This argument, however, is fallacious, as it does not consider the large percentage of those who die before such a favorable condition is presented; and, in the second place, many patients never develop a localized abscess, the process being diffuse from the beginning.

A number of surgeons, among them Korte, who formerly advised against operation in the early stages, now advise early operation. One of the first to advise operating in the first stages of acute pancreatitis was Halm, who, considering the collapsed condition of most of these cases, recommended a small incision in the middle line below the umbilicus and drainage for the evacuation of the blood-stained peritoneal fluid. He thought the high mortality after operation in such cases was to some extent due to the fact that the operation was undertaken with the mistaken diagnosis of peritonitis or intestinal obstruction, the prolonged search for the perforation or obstruction being badly borne by such weak subjects. This point has also been emphasized by Mikulicz and others. Woolsey, who has reported three cases operated upon in a manner essentially similar to Hahn's, with recovery, recommends laparotomy and drainage, and thinks extensive and prolonged operations are not justifiable. Pels-Leusden, Wiesinger, and others have reported cases thus treated successfully.

Halsted, Pels-Leusden, and Bevan have reported cases of acute pancreatitis which recovered after laparotomy and closure without drainage. In some of these cases nothing more was done because the collapsed condition of the patient would not allow it.

The benefit derived from these methods of operating is doubtless due to the removal of the blood-stained peritoneal fluid, which is very toxic. Doberauer and Guleke have shown that the critical condition of patients with acute pancreatitis is due to a trypsin intoxication, the intensity of the intoxication depending upon the extent of the necrosis and the amount of pancreatic gland destroyed. Guleke has succeeded in immunizing animals against trypsin.

Mikulicz in 1903 advanced the view that acute pancreatitis should be treated as any other phlegmon, and that the moment the condition is recognized the abdomen should be opened and the inflamed peripancreatic tissues and the pancreas itself incised and drained. He considered the flushing of the abdominal cavity with salt solution to be quite important. Porter and Muspratt have reported cases successfully treated by this method, deep incisions being made into the pancreas and drainage instituted.

A study of the literature reveals the striking frequency of the sequence of acute pancreatitis upon cholelithiasis, and a good many cases are recorded in which at the operation for acute pancreatitis gall stones were found in the gall bladder and cholecystostomy performed, the patient recovering completely. Such cases have been reported by Mayo, Nash, Lilenthal, Kelly, Robson, and others.

Henle operated upon a case in which the diagnosis of intestinal obstruction had been made. After demonstrating the presence of fat necroses in the omentum, a large peritoneal exudate was removed and an artificial anus was established in the caecum to relieve the condition of intestinal paralysis. The patient recovered and the artificial anus was subsequently closed.

I want to emphasize the importance of operating

in the early stages of acute pancreatitis, before a secondary infection from the intestine renders the prognosis more unfavorable. Inasmuch as these cases are seldom diagnosed with absolute certainty and are often mistaken for peritonitis or intestinal obstruction, the operation will usually be in the nature of an exploratory laparotomy. The discovery of blood-stained fluid and fat necroses clinches the diagnosis.

The exact nature of the operation will depend upon the condition of the patient. The ideal procedure would be about as follows: Rapid removal of the peritoneal exudate, perhaps with irrigation of the abdominal cavity with salt solution; exposure of the pancreas through the gastrocolic omentum, incision of the swollen, inflamed gland, and introduction of a large gauze tampon; examination of the gall bladder and bile passages; removal of calculi, if present, and cholecystostomy. As a matter of fact such a procedure will probably seldom be warranted and must be modified to suit the case. The simplest procedure is that advocated by Hahn, namely, laparotomy and drainage of the peritoneal exudate. However, it seems to me that a rapid exposure of the pancreas and the introduction of a large tampon, perhaps with incision into the gland, will cause very little more shock and offer better prospects of cure. A larger experience will probably show which procedure will cause the smallest amount of surgical shock, while still accomplishing the object for which it is undertaken.

Mikulicz in 1903 collected forty-six cases of acute pancreatitis, which had been operated upon in the acute stage with only nine recoveries. On the contrary, eighteen out of thirty-five cases recovered when the operation was done in the later stages. He states, however, very rightly that such statistics are of very little value, for, as he says: "First of all, we do not know from the statistics available at present how many of these patients with acute pancreatitis really survive the acute stage, and go on to the subacute, the most favorable stage for operation. I believe that comparative statistics in this regard will show that the great majority of the patients die in the acute stage. The possibility that a goodly number could be saved by a rationally conducted operation cannot at present be denied."

Bloodgood in 1904 collected seventy-five cases of acute hemorrhagic pancreatitis, of which twenty-five recovered and fifty died. Of the twenty-five which recovered, eighteen had been operated upon, the remaining seven recovering without operation. Of the fifty which died, twenty-three had been operated upon.

Most recent statistics of operations for acute pancreatitis give the mortality as fifty to sixty per cent.

Korte in a recent publication reports forty-four cases of acute pancreatitis, of which thirty-four occurred in his own division in the Krankenhaus am Urban and also in his private practice, while ten cases came from the second surgical division of this hospital and were seen and reported by Brentano. Of the forty-four cases thirty-eight were subjected to operation. In six cases no attack was possible. Of the thirty-eight cases operated upon, the diseased pancreas was directly attacked in thirty-four of the cases, while in four cases only the concomitant disease of the gall passages received operative treatment. Of the thirty-four operated patients, in which the diseased organ was immediately approached, eighteen recovered and fourteen died, a mortality of forty-seven per cent. Of twelve cases operated upon in the first week after the beginning of the illness eight recovered and only four died.

Treatment of Suppurative Pancreatitis; Pancreatic Abscess.—Those cases of acute pancreatitis which proceed to suppuration, the subacute form of Robson and Moynihan, are of particular interest, since they are especially amenable to surgical treatment. In the majority of these cases the onset is as acute as in the hemorrhagic form, but the symptoms are, as a rule, less severe, and the process is not of sufficient extent and gravity to cause death. Somewhat later the necrosis and secondary infection give rise to the formation of more or less extensive abscesses, containing larger or smaller portions of the sequestrated pancreas. Considering the satisfactory results of prompt surgical intervention, the early diagnosis of these cases is very important, especially since grave complications are prone to arise, such as liver abscess, subphrenic abscess, thrombosis of the portal vein, exhaustion, etc.

Diffuse suppuration or abscesses confined to the pancreas are seldom seen, since the pus is very liable to burrow into the peripancreatic tissues and lesser peritoneum, often giving rise to a tumor, which can be more or less clearly defined before operation and which facilitates the diagnosis. The tumor usually presents in the mid line below the stomach, but occasionally above the stomach, or it may extend well over into the left flank, giving rise to the mistaken diagnosis of perinephritic abscess.

Spontaneous healing without operation is unusual, but cases where the diagnosis was confirmed have been recorded, in which recovery took place after the rupture of the pancreatic abscess into the intestine. Robson has reported such a case, and another in which the abscess ruptured into the stomach and recovery followed a gastro-enterostomy.

Cases of diffuse suppuration or small multiple abscesses offer little hope of successful surgical treat-

ment, but with a large localized abscess the outlook is much brighter.

The diagnosis is often not determined until the abdomen is opened. The incision is usually made in the median line or through the rectus muscle over the most prominent part of the tumor mass. If the examination shows the presence of a pancreatic abscess, the abdominal cavity is packed off with gauze and the abscess opened, usually through the gastrocolic omentum, evacuated and drained with gauze or by means of a rubber tube surrounded with gauze. It is generally preferred to complete the operation in one stage, but it can be done in two stages, the abscess first being walled off with gauze or by suturing its walls to the parietal peritoneum and opened later, after adhesions have formed.

To secure better drainage, especially when the abscess extends well toward the flank, it is sometimes advisable to make an incision in the costovertebral angle, and by blunt dissection, passing in front of the lower pole of the kidney, to open a path for drainage.

In recent years numerous cases have been reported in which recovery followed operations for pancreatic abscess. Thayer has reported four cases operated upon by Halsted, Finney, and Bloodgood, three of which recovered. Robson has reported eight cases occurring in his own practice. Six were operated upon, with recovery from the operation in five, though in one of the cases the relief was only for a few weeks and in another for a few months.

REPORT OF CASES.

During the last three years I have operated upon four cases of acute pancreatitis in my service at the University of Virginia Hospital. Case 2 belongs more properly to the class of subacute pancreatitis or pancreatic abscess.

Case 1.—T. J., male, aged 51 years, was admitted to the hospital, April 29, 1909, complaining of abdominal pain and vomiting.

Family History.—Unimportant.

Personal History.—Owing to the urgency of the case very little of his previous history was obtained. He stated, however, that he used very little acohol.

Present Illness.—Patient was taken sick thirty-six hours ago, with severe pain in the epigastrium, where it remained twelve hours, then moved downward, but has never settled on the right side. He vomited shortly after onset of illness and has vomited frequently since. Bowels were obstinately constipated, but moved with the aid of large doses of salts and a big enema of olive oil. Patient says that he has suffered for the last few years with acid eructations, for which he has taken soda, but has never vomited except with headache. He has not vomited any blood.

Examination.—The patient, who is rather stout, looks ill. Pulse 132 to the minute, temperature 101 per rectum, leucocytes 20,000. Sclerotics are bile-stained. The abdomen is considerably distended and the central portion is blistered by applications. On palpation there is some general abdominal tenderness, most marked around the umbilicus, though, according to his statement, eight hours ago it was most marked in the appendix region. No mass felt. Liver dulness reaches to within three finger breadths of the costal margin in the right nipple line. The urine was not examined. No definite diagnosis was made before operation, but an acute pancreatitis was suggested as a possibility, the pronounced shock in such a short time and the bile staining of the sclerotics strengthening this opinion.

Operation.—There was considerable trouble during the anesthetization on account of vomiting of large quantities of black fluid. An incision was made through the upper portion of the right rectus muscle. A considerable amount of bloody fluid was found in the peritoneal cavity, which immediately suggested an acute pancreatitis. A piece of omentum was then sought for and found to be studded with fat necroses, clinching the diagnosis. The pancreas was palpated and found to be greatly thickened and poorly defined. No stones were felt in the gall bladder or ducts. The patient's condition was so bad that it was not thought advisable to explore the pancreas, so an iodoform and protective drain was placed in the lower end of the wound, which was closed with through and through silk worm gut sutures. At the end of the operation an intravenous infusion of salt solution was given, which improved his condition somewhat. The improvement was, however, only temporary and he died six hours later.

Autopsy.—A complete autopsy was not allowed, but the liver, pancreas, duodenum, gall bladder and ducts were removed through the operative incision. The pancreas was everywhere enlarged to twice its normal size, presented a reddish mottled appearance, with marked hemorrhagic infiltration and areas of necrosis. The pancreatic ducts were not bile stained and there was no stone in them. The gall bladder was somewhat distended, but no stones were found in the gall bladder or ducts. There was a large amount of mucus in the duodenum, but no particular reddening of the mucosa. In this case, therefore, no definite etiological factor for the acute pancreatitis was discovered.

Case 2.—Mrs. M. S., aged 55 years, was admitted to the hospital May 26, 1909, complaining of attacks of pain in the right hypochondrium accompanied by nausea and vomiting.

Family History.—Unimportant.

Personal History.—Has had all the usual diseases of childhood. Had diphtheria when a girl and pneumonia 15 years ago. Has never had typhoid fever, has been generally healthy except for her present complaint. She suffers somewhat from shortness of breath on exertion and her ankles are sometimes a little swollen. Menses began at 12 years of age and have always been regular. Has had two children. Labors normal.

Present Illness.—For twenty years she has had irregular attacks of pain in the right hypochondrium. Last fall, seven or eight months ago, these attacks were unusually severe. They would come on suddenly, usually after some indiscretion of diet, would last from one to six hours and were usually accompanied by nausea and vomiting. The pain would begin in the right hypochondrium and radiate toward the umbilicus. Two months ago the attacks began again with equal severity and have recurred at frequent intervals to the present time.

Examination.—Patient is a well-nourished, healthy looking woman, color good. No jaundice of sclerotics. Pulse good quality, 90 to the minute, temperature 100. Examination of lungs, heart, and urine negative. The abdomen looks natural, no mass seen. On palpation mass the size of an orange can be felt beneath the right rectus muscle, extending from the costal margin to the level of the umbilicus. The mass is smooth, rounded, slightly tender and descends little, if at all, on inspiration. The rest of the abdomen is negative. Liver dulness reaches the costal margin in the right nipple line. The mass was thought to be most likely a hydrops of the gall bladder.

Operation.—Incision was made through the upper portion of the right rectus muscle. As soon as the peritoneum was opened it was seen that the mass, mentioned above, was not the gall bladder, but was situated behind the gastrocolic omentum in the region of the head of the pancreas. The gastrocolic omentum over the mass showed numerous fat necroses, was adherent to the parietal peritoneum in places and over the apex of the swelling had a dark discoloration. The mass, which was about the size of an orange, was smooth, elastic and actually fluctuant. A diagnosis of pancreatic abscess was made. The gall bladder was palpated and found to contain a large stone, otherwise the gall bladder seemed normal, not unduly distended. The gall bladder was opened and a stone 3 by 4 cm. in diameter removed. Cultures were made from the bile and proved to be sterile. A rubber tube was sutured into the gall bladder for drainage. The abscess was opened at its most prominent point and a large amount of purulent fluid and necrotic tissue evacuated. A large rubber tube was placed in the abscess and gauze packed about it. The abdominal wound was partly closed with through and through silk worm gut sutures. Cultures were made from the abscess and the staphylococcus aureus isolated.

Postoperative Course.—The patient did well after the operation, but discharged considerable quantities of necrotic tissue. She was discharged from the hospital about one month after the operation in good general condition, but the fistula was still discharging somewhat and continued to do so for several months after she left.

Case 3.—M. K., male, aged 30 years, was admitted to the hospital September 12, 1909, complaining of severe pain in the abdomen.

Family History.—Unimportant.

Personal History.—Patient has had the usual diseases of childhood and, at the age of ten, a severe attack of diphtheria, from which his recovery was slow. Four years ago he had a bad attack of typhoid fever and about three years ago a frontal sinus abscess, for which he was operated upon. Since that time his health has been fairly good with the exception of an occasional bilious attack. He has indulged in alcohol, but not to excess.

Present Illness.—Began eighteen hours ago with severe constant pain in the epigastrium, somewhat worse to the left. He vomited shortly after the onset of pain and has vomited frequently to the present time. Bowels have not moved in spite of frequent cathartics and enemata. He was brought in with a diagnosis of intestinal obstruction.

Examination.—Patient is a well-nourished man, seems to be in great pain, but does not look extremely ill. Color is good, no cyanosis, sclerotics are not bile stained. Pulse is of good volume and tension, 108 to the minute; temperature per rectum, 99.6; leucocytes, 16,000. Urinary examination negative. The abdomen is somewhat distented, especially in the upper portion. Respiratory movements are somewhat limited. No loops of bowel and no peristalsis seen. There is some general abdominal tenderness, which is quite marked in the middle of the epigastrium, but there is no definite rigidity or muscle spasm and no mass can be felt.

Operation.—Incision was made through the upper portion of the right rectus muscle. The transverse colon immediately presented in the wound and seemed somewhat distented. The small intestine was not distended and there was no sign of intestinal obstruction. There was a small amount of fluid in the abdomen, but it was not blood stained. There were numerous adhesions about the gall bladder, but no stones were felt in the gall bladder or ducts. The pancreas was palpated and found to be twice its normal size and rather firm. Numerous fat necroses were found in the gastro-hepatic omentum, gastro-

colic omentum and tranverse meso-colon. The pancreas was exposed through an opening in the gastro-colic momentum, a small incision was made in the pancreas and a gauze drain placed down to it. The gall bladder was opened and found to contain a considerable amount of very dark bile. Cultures were made from the bile and proved to be negative. A cholecystostomy was performed.

This case, which is the earliest and most favorable case of acute pancreatitis which the writer has ever seen made an uneventful recovery and was discharged from the hospital October 10, 1909.

Case 4.—Mrs. W. M., aged 36 years, was admitted to the hospital April 14, 1911, complaining of pain in the abdomen radiating to the back.

Family History.—Unimportant.

Personal History.—Has had measles, mumps and whooping cough. Had typhoid fever ten years ago. Has suffered with stomach trouble for eight years, manifested by vomiting and pain in stomach radiating to the back. Has had nine children, youngest being one month old.

Present Illness.—Patient gave birth to a child four weeks ago. Before the birth of the child she suffered from burning, cramp-like pains in the stomach, passing to the right shoulder, and these pains have become worse and continued to the present time. They have required frequent hypodermics of morphia. Six days ago she vomited a large amount of bile stained material. At that time she was jaundiced. She had chills every night for a week after the birth of the child.

Examination.—Patient is a thin woman, looks sick. Sclerotics are distinctly bile stained. Pulse is of fair quaility, 92 to the minute. Temperature, 100 on admission. Leucocytes, 9,200. Coagulation time four minutes. Urine analysis negative. The abdomen is flat and slightly asymmetrical, there being a fullness in the right hypochondrium. On palpation there is considerable tenderness in the epigastrium and right hypochondrium. No mass can be felt in the epigastrium, but in the right upper quadrant the edge of the liver can be felt, 5 cm. below the costal margin and beneath this a rounded body, the size of a hen's egg, which feels like a distented gall bladder. On inspiration it descends almost to the level of the umbilicus.

Operation.—Incision was made through the upper portion of the right rectus muscle. The gall bladder was found to be considerably distended and numerous stones could be felt in it. The gall bladder was aspirated and a large amount of bile obtained, which would seem to indicate an obstruction of the common rather than of the cystic duct. The gall bladder was then opened and numerous small, faceted stones, and one stone the size of a walnut removed. A careful examination of the common duct failed to reveal any stones. The pancreas was examined and the whole organ found to be greatly enlarged and fairly fixed in position. In places the limits of the gland were not well defined. In the transverse-meso-colon near the pancreas there were several areas of fat necroses, suggesting a subacute pancreatitis.

A large rubber tube was sutured in the gall bladder and the abdonminal wound partly closed.

Postoperative Course.—The patient did fairly well for a few days after the operation, then began to run a temperature and the pulse became more rapid She died rather suddenly nine days after the operation.

Autopsy.—About a liter of blood was found in the abdominal cavity. Mesentery of the ascending colon infiltrated with blood. Head of pancreas converted into necrotic, hemorrhagic mass. Numerous fat necroses found. The pancreatic ducts were patent, but a firm calculus 5 mm. in diameter was found in the ampulla of Vater.

SOME MODERN FACTORS OF SAFETY IN SURGERY.*

By J. Shelton Horsley, M. D.,
Richmond, Virginia.

The introduction of anesthesia and later the general adoption of the teachings of Lister have so revolutionized surgery that we are inclined to ignore advances that are less startling, but which have greatly reduced the death rate in surgical operations.

The question of anesthesia is still far from being settled, and though ether seems to be admittedly safer than chloroform, the irritation of the various eliminative organs that follows its use makes it far from an ideal anesthetic. The class of cases in which ether is most dangerous is the desperately sick from either hemorrhage or infection. The mere administration of ether often lowers hemoglobin 10 per cent, and a septic patient already suffering from profound enemia can hardly carry this additional burden of hemolysis, to say nothing of the effects upon the kidneys and stomach. The administration of nitrous oxide and oxygen has been brought forward prominently recently. For short operations it has many advantages, though in the opinion of Freeman Allen, of Boston, Gwathney, of New York, and other specialists in anesthesia, it is a dangerous anesthetic for long operations. Spinal anesthesia, and local, or

*Read in the Section on Surgery at the sixth annual meeting of the Southern Medical Association, Jacksonville, Fla., Nov. 12-14, 1912.

regional, anesthesia have their places in certain cases, and while ether properly given probably remains the safest routine anesthetic, there are many instances in which nitrous oxide and oxygen, or local anesthesia, will give the patient a better chance.

One of the most important improvements in modern technic is the introduction by Crile of what he calls *anoci association*. The methods of accomplishing this may be divided roughly into, first, general measures which allay fright and reduce the excitability of the cerebal cortex; and, secondly, measures which block off, or lessen impulses from sensory nerves which would have been harmful if transmitted to the brain in full force. The damaging effects of fright and apprehension are reduced by giving morphine and scopolomin before the operation and by the personal attention of the operator and his associates in inspiring confidence and encouraging the patient. Crile has shown that there is real pathology created in the brain by shock, fright, profound nervous impulses and marked anemia. The cortical cells may be so over-stimulated, or may be so affected by mal-nutrition, that many of them will degenerate. In this way we can account for numerous cases of shock, or fright, or great hemorrhage in which the patient apparently recovers, but is nervous, lacks concentration, or shows some mental symptom which heretofore we have not been able to account for, but which we now know is due to degeneration of the cortical cells. We can profit by these investigations not only in lessening the number of deaths that have been formerly attributed to shock and loss of blood, but in lessening the morbidity of these patients after recovery.

The treatment of infection has been much more satisfactory in recent years. Instead of devoting all of our attention to the destruction of germs, we now recognize that we must take care of the natural defenses of the body. In our eagerness to destroy all germs, we sometimes lose sight of the fact that we are damaging with antiseptics the patient's cells and so decreasing his power of resistance. Anything that weakens the general resistance of the patient such as prolonged preparations, prolonged anesthetic, or roughness in handling the tissues, whether the patient is under ether or not, serves to diminish the defensive power of the body and so enables germs to overcome the weakned body cells and thereby create infection. Too often obvious sources of infection are neglected while laying stress upon some unimportant feature. There is a great tendency to blame all infections upon catgut, and if a non-pathogenic germ is found in the catgut, the surgeon may be satisfied with the investigation and goes no further. The magnificent demonstrations of Pasteur, and later of Lister of infections produced by dust in the air are too frequently ignored. If the surgeon who is bothered with occasional outbreaks of unaccountable sepsis will leave a Petri dish exposed on the instrument table during an operation, he will often find it containing many colonies of pyrogenic bacteria. The construction of operating rooms, their location on the top floor, the use of vacuum cleaners, and frequent flushing of the operating room floor, are some of the methods that have been utilized in diminishing the danger from dust.

The personal technic has, of course, a great deal to do with success aside from the standpoint of asepsis. The surgeon who operates for time and who conceives that the chief object of an operation is to complete it in the fewest number of minutes, may occasionally achieve brilliant results, but will frequently leave behind incomplete work which will require further operations later on, or will find deaths from post-operative hemorrhage and slipped ligatures creeping into his mortality rates. On the other hand, the man who is slow on all occasions and who always insists upon taking his time even in desperate cases, will often destroy the resistance of a patient who might otherwise have been saved. The happy medium between these two extremes is the ideal.

Transfusion of blood is frequently a life-saving measure. Every surgeon sees cases of hemorrhage in which the ordinary methods do not avail. The use of salt solution, lowering the head of the bed, and bandaging the extremities may tide over the crisis, but there will be some patients who have lost so much blood and whose hemoglobin has sunk so low that nothing but red blood cells will prolong life. This can only be provided by transfusion of blood from one individual to another, and in the class of cases just mentioned, this measure is the only thing that will save life. It may be done by various methods, but perhaps the most satisfactory is by the use of sutures. The same technic is employed as in arterial suturing when a divided artery is united. Not only does transfusion of blood save the lives of patients after acute anemia when other methods do not avail, but this procedure will also lessen the morbidity of the patients who would otherwise recover, as it will keep up the nutrition of the cerebral cells and so prevent their degeneration.

The surgery of tumors and particularly of malignant tumors demands increasing attention. The death rate from malignant tumors appears to be greater now than it has ever been. Prophylaxis is difficult and the chief factors of safety in operations for malignant tumors are early diagnosis and prompt treatment. The earlier the diagnosis in cancer the more difficult it is, but at the same time the more important for the patient. It is

hard to understand the position of those who delay the diagnosis of cancer in order "to clear it up." If a patient was bleeding from a wound in the wrist, the medical attendant would not wait to check the hemorrhage until he could be positive whether the bleeding came from the radial or the ulnar artery, or from some of their branches. Yet this is just the attitude of him who waits until the diagnosis of cancer is absolutely certain. Hemorrhage may take life more quickly, but with cancer death is just as inevitable. The physician who watches a lump in the breast "to see what it is going to do" and to have his "diagnosis thoroughly established" (by which time the cancer may be inoperable) is just as culpable as the doctor who permits his patient to bleed to death because he cannot decide just which artery is bleeding. In each instance valuable time is being lost and the patient is brought nearer and nearer to his death because of the delay. In making a diagnosis it must be particularly borne in mind that cancer never causes pain in the early stages; this symptom is one of the terminal symptoms just as dropsy is a terminal symptom of some forms of nephritis. The limitation of motion, the absence of pain, the presence of a lump, however small, and the age of the patient, are the points that should be gone over most carefully. It is well to remember that when we cut through healthy tissues in order to reach a tumor for microscopic section, we are practically inoculating the tumor cells in a freshly cut tissue and thereby hastening metastases. The lymphatics take up the cells and in a few hours carry them beyond the reach of the surgeon's knife. It is doubtful if any cancer of the breast which has been cut into for diagnosis, and the operation done a few days later, has ever been permanently cured. If, however, operation is performed immediately after an exploring incision, the danger of metastases is very slight, as it usually takes several hours to carry the cancer cells beyond the region of the incision.

The only method of treating malignant tumors that is reliable in most cases is extirpation by means of a surgical operation. In some instances when the cancer is superficial and not on the mucous membrane, X-ray, or a paste may be justifiable. While we do not know just what causes the original cancer cell to increase and multiply any more than we know why a grain of corn sprouts, we do know that a cancer consists of an aggregation of cancer cells just as an army is an aggregation of soldiers, and that there are certain conditions which favor or retard the growth. The method that eradicates all of these cells in one mass is usually the most satisfactory. Operations upon cancer differ from other operations in that they involve some knowledge of the character of the tissue as well as of the technic of the operation. A knowledge of pathology is becoming one of the modern requisites in operations for cancer, and it is more and more necessary that the surgeon shall not only study cancerous tissue on the table, but examine it in the laboratory and so be able to associate the microscopic appearance with the gross findings. He should carry his pathology in his own head and fingers and not in those of some one else. In doubtful cases he should have frozen sections made where he can examine the tissue and clear up the cases entirely.

A practical knowledge of pathology not only permits the operator to carry out a more extensive technic when necessary, but, on the other hand, will check mutilation. In most cases of cancer of the penis, the growth is of a squamous variety and begins on the prepuce. Here a circumcision, if done early, gives as much hope of permanent cure as amputation of the penis. Many tumors of the bone are either bone cysts, or giant cell sarcomas, and local treatment by excision or curetting will give as good results as amputation.

The principle of taking out all the malignant tissue in one mass adds greatly to the safety of operations for malignant tumors. In many instances it is wise to block the lymphatics after the operation with some strong antiseptic, such as carbolic followed by alcohol. This not only blocks the lymphatics, but renders the local condition unfavorable for the implantation of cancer cells.

Many patients with cancer reach the surgeon in an inoperable condition. Where the growth, or its metastases, are clearly out of the reach of the surgeon, an operation is useless, but when we cannot reasonably demonstrate metastases beyond the operable stage, it is the duty of the surgeon to give the patient a chance by doing a radical operation. The mortality will be high, but with careful work a small number of these patients can be saved, which is infinitely better than permitting all to die.

Transfusion of blood is very rarely applicable in operations for cancer, because hemolysis is likely to occur. Crile has used this fact as an early diagnostic sign, but the tendency to hemolysis disappears as the disease advances. Suturing of arteries has a very definite place in operations for malignant tumors. Occasionally a cancer or sarcoma is closely adherent to the wall of a large artery or vein, as the axillary or femoral, and for this reason only is pronounced inoperable. If the surgeon can suture arteries successfully, it is entirely feasible and proper to resect the adherent portion of the artery and suture its ends together. If the section removed is too long to admit of easy approximation of the arterial ends, a segment of vein can be interposed. The technic of this procedure has been described in the

Journal of the American Medical Association, July 6, 1912, in an article entitled, "A New Method of Suturing Blood-Vessels." An important change in technic since the publication of this article is that I now use the cobbler's stitch, or double mattress suture, instead of the single mattress suture.

In summing up the recent factors of safety in surgical operations, I would emphasize anoci association, reducing infection by conserving natural immunity and by the elimination of dust, transfusion of blood, arterial suturing, and the practical application of the surgeon's knowledge of pathology to the diagnosis and extirpation of malignant tumors.

DISCUSSION.

Dr. W. A. Bryan, Nashville, Tenn.—I desire to mention two points that Dr. Horsley brought up. One, the idea that cancer is not always a painful growth. At the beginning it never is a painful growth, except where another tumor, a benign one, similarly situated, would produce pain.

In other words, pain is an accident of cancer. It always is. It is due to things that have happened in the cancer, due to its action on the nerves, due to its infiltration of the nerves, pressure or something that has happened to the tumor. Cancer and sarcoma are not painful per se.

Another point worth emphasizing: our method of making our diagnosis. The things that diagnose malignant tumors are late things. You talk about the hemorrhage of cancer; you talk about metastasis; you talk about lymph-node involvement and all the things that make cancer an easy thing to diagnose, and when you are ready to make your diagnosis it is too late to be of any benefit to the patient. On the other hand, we frequently kill the patient, without admitting it to ourselves, in making a late diagnosis. To illustrate: The patient has cancer in the peritoneal cavity, we aspirate and draw out the fluid; cancer has been grafted in the track where we stuck our trocar. Kelly cured a pelvic cancer and, at the same time, had a cancer to occur in the scar of his abdominal incision, where some of the cells escaped.

Now when you open the tumor and leave the case to operate a few days afterwards, practically, as the doctor has said, there is a recurrence every time, even if the surgeon has removed all of the gross part of the tumor; and the thing I teach the students I lecture to is this: Cut off your blood supply and make a frozen section—where you wait ten minutes. If positive cut off the blood supply from that tumor; don't destroy it; cut it off temporarily, then make your dissection and determine if cancer is present. After it is made, carbolic acid or some equivalent and suturing, then the operation is efficacious.

Dr. Joseph Graham, Durham, N. C.—As I understand it, the title of Dr. Horsley's paper was "Some Modern Factors of Safety in Surgery," therefore I would like to discuss the diagnosis of cancer.

I think this paper has for us a great deal of importance. I don't know of any subject that could be of more importance than the attempt to safeguard our operations. I believe the most important safeguard in surgery is for us to realize the fact that the successful practice of surgery tends to the very comprehensive knowledge of medicine, and that no surgeon knows it all. Therefore the successful practice of surgery depends upon our developing good, clean work, so as to make the proper diagnosis, and properly safeguard the patients during operation and in the after treatment; and to develop this good, clean work, every surgeon will find that it pays him well to have associated with him good diagnosticians and in the treatment of the medical complications that develop.

I think that these are practical points, and I believe if we are going to decrease danger in operating in surgery the way for us to do it is to develop practical work in the man who attempts to do surgery; then we will have less of this fee splitting that the essayist spoke of, and we will have a greater decrease in our mortality, and, not only that, but in our morbidity. The thing that interests me in surgery is not mortality but morbidity.

Today, in many well regulated hospitals where you have a competent nurse to keep things clean, any tyro can go around in there and, with her assistance to keep things clean, many patients will not die, but they come out with post-operative complications which are surgical junk.

I am advocating clean work, and assistants. Those are the things necessary to safeguard operations and decrease morbidity and mortality.

Dr. Horsley (Closing)—As Dr. Bryan has mentioned in the discussion, pain is not present in cancer itself except in the very late stages, and is never a symptom in the early stages. Many a life has been sacrificed by waiting on a painless tumor until it became inoperable, when, as a matter of fact, the absence of pain is one of the chief symptoms of malignancy.

In regard to the cutting off of the blood supply mentioned by Dr. Bryan, it is a good idea when it can be done, particularly in sarcoma. Handley, of London, has done excellent work in showing that cancer of the breast always extends along the lymphatics and practically never metastasizes through the blood vessels. Even if the cells reach the blood vessels, they perish in the blood stream and only grow when transplanted by the lymph channels. In the metastases in bone, for instance, we find that the bones of the hand and feet are never affected; which would certainly be the case if the cancer spread through the blood vessels instead of through the lymphatic channels. Sarcoma, however, is intimately connected with the blood supply, and the blood vessels in a sarcoma are exceedingly fragile, so that metastases occur chiefly through the blood vessels in sarcoma. As most tumors of the breast are cancer, it would hardly be necessary to attempt to cut off the blood supply during an exploratory incision when the cancer cells travel through the lymphatic channels.

THE IDENTITY OF CAUSE OF ASEPTIC WOUND FEVER AND POST-OPERATIVE HYPERTHYROIDISM AND THEIR PREVENTION.*

By George W. Crile, M.D.,
Cleveland, Ohio.

The temperature of warm-blooded animals is rigidly maintained within a certain range. The source in the normal state of their body heat is oxidation of chemical compounds.

Physicists tell us that any form of force may be converted into heat, hence one would expect to find among other physical results production of heat as a result of both motor and emotional acts.

Both motor and emotional acts are produced by adequate stimuli. When an adequate stimulus reaches the brain, whether it be psychic or mechanic, there is a discharge of nervous energy, *i.e.*, there is oxidation. This discharge may be attended by visible action, such as voluntary muscular action, or invisible muscular and glandular action and brain action. One of the results of this release of force is the production of heat. This heat is clinically indicated by the thermometer. Quite apart from infection or disease, what influences may produce increase in temperature? Anything that will drive the motor mechanism, such as emotional stimulation, physical injury, muscular or mental work, thyroid extract and iodine. Among examples are anger, play, athletic contests, fear and other states of rapid consumption of energy. I have seen the temperature rise three degrees in fifteen minutes in a rabbit frightened and a degree in a child in a tantrum. Routinely, one sees some rise in the temperature of a patient on the day of his admission to the hospital, and I have often observed a rise in the pulse and the temperature of anxious relatives, while a visit from an emotional friend to an emotional patient will routinely cause a rise in a patient's temperature. Now what relation has this to aseptic wound fever and to post-operative hyperthyroidism? Since performing operations under the principle and the technique of anoci-association we quite unexpectedly observed a changed post-operative temperature and pulse curve. Analyzing this we found that the same technique that controlled post-operative hyperthyroidism also controlled aseptic wound fever. Furthermore, if any parts of the anocic technique were omitted we then observed more post-operative phenomena.

The final convincing proof came when the post-operative wound stimuli were also excluded by blocking the wound with quinine and urea hydrochloride, and we found that with the exclusion of the psychic and the traumatic stimuli in both the operative and the post-operative phases, that, barring infection, the post-operative phenomena of temperature and pulse were almost wholly eliminated. The conclusion, then, is that these phenomena are the conservation of energy into heat as a part of the activities of the brain, and, hence, of all of the body by the psychic and the traumatic stimuli.

Now these observations suggest that there exists some common principle which underlies post-operative hyperthyroidism and aseptic wound fever, and the fever produced by physical exercise and the primitive emotions, such as fear, anger and sexual excitation. This general principle is, I believe, a fundamental one, viz: that the entire mechanism of animals is motor; that all the functions are motor, and that the energy intended to be utilized in a motor act may in part be converted into heat. As to Graves' disease I have heretofore given reasons for regarding this disease as being due to such a disarrangement of the general motor mechanism whereby the threshold (or susceptibility) of the brain to both traumatic and psychic stimuli is lowered to varying degrees. Thus may a given stimulus that would cause no appreciable change in the pulse or temperature of a normal individual cause, in a case of advanced Graves' disease, with its low threshold, a manifold stimulation—and in consequence the brain and the body of the sensitized Graves' case would be driven as many times as hard, producing a correspondingly greater change in the temperature and in the pulse rate. This accounts for the influence of morphia on the pulse and temperature, because morphia raises the threshold to stimuli, *i.e.*, it makes it more difficult for a stimulus to reach and act on the brain cells. This hypothesis explains the temperature and pulse changes in the emotional state, as well as in simple fractures; in the pulse and temperature changes produced by a stormy visitor, as well as by the surgical operation. It also explains the negative side of these phenomena, viz: why a patient well under morphia, or in stupor, from disease, shows no such change; why the aged show so slight and the infant so great a change in pulse and temperature on excitation; why an operation performed under anoci shows no change; it explains why a case of Graves' disease under excitement quite independent of Graves' disease operated without anoci; and finally it explains the absence of these destructive phenomena following operations under anoci. This same prin-

*Read before the Southern Surgical and Gynecological Association, December, 1912.

ciple applies as strongly even after the operation.

If at the time of operation a patient, whether a Graves' case or not, receive so powerful a psychic excitation that in imagery she tends to frequently recall that event, in so doing, each time the original harmful stimulus of the operation is recalled through associative memory, causing a driving of the motor mechanism. Frequently does the patient recapitulate the anxiety, the suffering; in fact all of the noci-associations of the operation—until, at last, the power of recall fades from memory.

Now under anoci the threshold is ever kept high. There is no picture written upon the conscious or subconscious memory, for not even the operation itself has been recorded upon the brain.

Therefore, there can be no destructive recapitulations; there are no *noci-associations*, and time is not required to raise the threshold or to dim the memory. Thus is explained the speedier convalescence and the patient without post-operative phenomena under the protection of anoci, and thus we see a general principle underlying both post-operative wound fever and post-operative hyperthyroidism being a pathologic, a magnified post-operative wound fever.

THE MANAGEMENT OF FRACTURES OF THE ELBOW.*

By Isidore Cohn, M.D.,

Lecturer and Demonstrator of Minor Surgery, Tulane University; Clinical Assistant in Surgery, Touro Infirmary, New Orleans, La.

The management of injuries, which many are still content to treat in ways that result in stiff elbows and varying amounts of deformity, should be of interest to us.

On a previous occasion I called attention to the statistics as given by Ashhurst. His results show 94 per cent of cures in the sense of lack of deformity and mobility of the elbow; whereas, other observers, using different methods of treatment, have had a very much lower percentage of perfect results.

The difference in results does not lie entirely in the statement that one uses the hyperflexed position and the other makes use of extension, but on the after care of these injuries. Intuition is of value, but it cannot teach one how to correctly manage supra-condyloid fractures. Many of the authorities content themselves with the announcement that they have obtained results with a particular method of treatment without giving the details of their after care, and herein lies the secret of their success, and also the reason others cannot obtain like results. Nowhere is this truer than in the management of supra-condyloid fractures.

If one expects perfect results to follow the reduction of the deformity and maintenance of the elbow in a hyperflexed position during the period of bony union, he will be sadly disappointed. I do not, however, want to be misunderstood as one who advocates too early passive motion.

In adopting any procedure we should be guided by three or more considerations—namely: (1) Is it anatomically correct? (2) Does it offer the patient greater comfort than other methods? (3) Does it give better results? All of these questions can be answered in the affirmative for the method under consideration as compared to methods previously adopted. For the sake of completeness, let us take these questions up in their respective order.

(1) Reduction, the essential factor in the treatment of all fractures, is maintained in the hyperflexed position without the aid of artificial devices, such as splints. We have a natural posterior splint in the triceps; further, the lever action of the flexor muscles of the forearm is overcome by the relaxation which the hyperflexed position permits; there is, therefore, no tendency on their part to increase the deformity into the bend of the elbow.

In fractures of the external condyle the position of hyperflexion brings the head of the radius closer to the condyles, and, with the aid of the triceps, prevents displacement. Practically the same anatomical considerations indicate the use of this method in all fractures involving the condyles or portions of them.

(2) No one would deny the comfort which this position gives a patient if they had seen but one case in this series (Case 7). Prior to the reduction he would not let anyone touch his elbow, and he was unable to find a position in which the part could be made comfortable. Under light anesthesia the deformity was reduced and the part put in hyperflexion. When he was again conscious he was able to abduct or adduct the arm at will without pain. The comfort of the patient is greatly increased by dispensing with all forms of bandages which bind the arm to the chest wall. It has been suggested by Ashhurst that we make use of a simpler roller bandage fixed around the wrist and suspended from the neck. We have been making use of a special bag which the patients have made for each case. It is made of cotton, and takes the form of a cone, apex down. The tapes which are used to suspend

---

*Read in the Section on Surgery at the sixth annual meeting of the Southern Medical Association, Jacksonville, Fla., November 12-14, 1912.

the bag around the neck are attached to the base of the cone.

(3) In this series there were eleven cases. Of this number there are eight perfect results. The three cases in which there is limitation of motion were seen several days after the accident, in one case eleven days, and in two of these cases we had a fracture of the olecranon, complicating the fracture of the humerus. Therefore we may conclude that in the series of fractures in which the olecranon was not injured, eight out of a possible nine have perfect results, the ninth case not having been seen for eleven days.

Case 8, Nov. 1, 1912.

The management of these cases has been about as follows: Reduction has been accomplished by temporarily hyperextending to overcome any impaction, after which the elbow is acutely flexed, and the flexures are well powdered, the arm and forearm are padded well, and a roller bandage is applied. The bandage should include the hand. If this last-named procedure is not carried out, there will be a great amount of swelling of the hand, which will, in turn, be a source of alarm to the parent.

Case 8, Nov. 1, 1912.

The first time we make use of the roller bandage sling, as suggested by Ashhurst, and we instruct the parent how to make the bag described in this paper. The patient is always seen the following day, and, if necessary, the bandage is changed. At least twice a week the bandage is removed for the purpose of inspection; if no untoward accident has happened, the parts are carefully washed and redressed, as before, until the tenth or twelfth day. At this time there should be sufficient temporary callus thrown out to prevent a recurrence of the deformity unless the manipulations are too severe.

If the arm is allowed to remain hyperflexed during the entire period of bony union, we will have atrophy of the muscles and contractions of the tendons; therefore, after the twelfth day the dressings are changed every three days, and at each dressing the flexion is diminished until, at the end of about four or five weeks, the arm is fully extended. The position is maintained by the use of an anterior splint which has a hinge joint at the elbow (Levis).

No great amount of massage or passive motion is allowed, because it has been shown by the followers of Championiere that too much motion favors excessive callus formation, which, in turn, in the proximity of a joint, will limit the motion of the joint in question. In this connection it may be of interest to quote the experience of Mennel:

"Having resolved that movement should be applied freely to insure the absence of adhesions, I was delighted day by day to find free movement

possible. But, to my disgust, about the third week the range of motion would grow less and less."

In discussing the situation with Prof. Championiere, he was informed that "the excess of callus had been due to an overdose of mobilization." We, therefore, see that too early passive motion, or attempts on the part of many to practice the methods of mobilization, may lead to failure to obtain good results.

After the fifth week the arm is taken out of all bandages and allowed to hang by the side. The patients are encouraged to practice the ordinary movements of the joint. If there is some limitation of motion on account of callus formation, dry heat and massage are made use of. Usually by the eighth week the patients have been able to use the arms with freedom.

CONCLUSIONS.

(1) We cannot recommend too highly the hyperflexed position.

(2) Gradual diminution of flexion should be practiced after ten or eleven days.

(3) Passive motion and massage should not be practiced too soon.

(4) Good, conservative methods should be practiced, especially in children, before resorting to operative methods.

PART II.

CASE HISTORIES.

Case I—A. Pl., age 5 years, male. Fell on the outstretched hand. He was immediately seen by his uncle, a physician. The radiograph showed a typical supra-condyloid fracture of the extension type. The result in this case was perfect, there being no deformity nor any diminution of mobility in the joint. This case was reported in the previous paper before this Society. (Figures 1 and 2 represent this case, he having sustained a second fracture during 1911.)

Case II—J. Z., clinic number 3455, age 9 years, white male. Diagnosis, fracture of external condyle. History: He fell from a horse on February 8, 1912. He was seen by Dr. Gessner on February 9, at which time the swelling was so great that he was unable to make use of the hyperflexed position. In lieu, however, he put the arm at right angles. This position he maintained until February 16, at which time he again tried to hyperflex the elbow, but again the position caused an obliteration of the radial pulse. The case was referred to me at the clinic on February 19. Examination at that time revealed a marked deformity, cubitus varus, crepitus over the external condyle, redness and swelling and a small granulating wound over the external condyle. Under anesthesia the elbow was acutely flexed, the deformity reduced and the parts bandaged as described. He was kept under observation about four weeks, at the end of which time we were trying to obtain some motion in the joint. When last seen he could flex the arm to an angle of 45 degrees and extend it to an angle of 130 degrees. Letters directed to the father failed to bring him to the clinic for inspection.

Figure 3 shows result after three weeks.

Case III—F. C., age 14, white male. The exact data regarding how the accident happened is not recorded. Examination at the clinic April 30, 1912, revealed evidence of fracture of the lower end of the humerus. The radiographs (Figures 4 and 5) demonstrate the exact nature of the injury, there being a comminuted fracture of the lower end of the humerus involving both condyles and the olecranon process of the ulna. The usual treatment was followed, and at the end of four weeks he left the city and I have not seen him since. Dr. Maner, of Bay St. Louis, wrote me a letter some time ago and informed me that the boy was able to row and swim with ease.

Case IV—Diagnosis: Fracture of external condyle and fracture of olecranon. (Figure 6.) History: Herbert H., age 15. Fell on extended palm while skating. Examination: Pain on pressure over external condyle and over head of radius. Marked swelling and cubo-valgum. The distance from the olecranon to the external condyle was greater than to the internal condyle. Treatment: Hyperflexion.

Result: Flexion to 30 and voluntary extension limited to 120. Radiographs taken September 10 (Figure 7) shows perfect union of the external condyle fracture, but an ununited fracture of the olecranon.

Case V—Clair L., age 8, clinic number 4528. Diagnosis: Epiphyseal separation of external epicondyle. History: On June 21 she fell from a pile of wood on the arm. Examination: Pain and swelling of left elbow, especially marked swelling over the external condyle. Slight crepitus at times was obtainable over the external condyle. Treatment as usual.

Result: July 15 she was able to flex arm to 45 and extend the arm to 160. August 1 no deformity; perfect flexion and extension; no limitation of pronation and supination. (Radiagraph's Figures 8 and 9; photograph's Figures 10 and 11.)

Case VI—Morris W., age 7. Referred by Dr. Kinberger. Diagnosis: Fracture and external condyle. He was first seen about three weeks after the accident occurred. When examined on June 26 there was still a great amount of swelling about the elbow and a marked limitation of motion at the elbow. The "carrying" angle was lost. The results are shown in the photographs (Figures 13a and 13b). After five weeks he could flex the arm to an angle

of 45 and extend to about 160. Radiograph (Figure 12) shows the result of this treatment.

Photographs taken five weeks after the accident are shown in Figures 13a and 13b.

Case VII—Jack C., age 9. Diagnosis: Supra-condyloid fracture, with lateral displacement of the lower fragment. (Figure 14.) History and examination: While wrestling he was thrown to the ground, and in an attempt to support his body he stretched out his arm and the injury resulted. He suffered great pain, especially if any attempt was made to touch the elbow. When I saw him he was supporting the injured arm in the palm of the uninjured hand. There was a visible prominence in the inner aspect of the arm just above the olecranon. Crepitus was easily elicited and abnormal lateral mobility was marked. Under light anesthesia the deformity was reduced and the part put up in hyperflexion. Figure 14 shows fracture after reduction. Figure 15 shows the result at the end of eight weeks. He can fully extend and flex the arm; there is no deformity.

Fig. 14. Case 7. Time of Accident.

Figures 14 and 15 show the case at time of accident and eight weeks after. (Photographs, Figures 16 and 17.)

November 1—He has perfect flexion and extension.

Case VIII—Adler H., age 9. Diagnosis: Compound supra-condyloid fracture of the humerus. History: Fell forward on outstretched palm on August 3, 1912. He was immediately brought to Touro. I saw him with Drs. Reed and Dicks. Radiograph Figure 18 taken after reduction. Examination revealed a compound fracture; the lower end of the shaft of the humerus was protruding through the wound. Under light anesthesia, after painting the surface with tincture of iodine, the protruding fragment was returned to its place and the deformity reduced. Hyperflexion. At the end of twenty-four hours the dressing was changed. At this time we found that the iodine had caused some vesication. A wet dressing of a watery solution of picric acid was applied. The photographs show plainly the result (Figures 19, 20 and 21).

He was seen on October 16, at which time he could extend and flex the arm completely. He has no loss of the carrying angle.

Case IX—Lucille L., age 12, white. Diagnosis: Fracture of the internal condyle (trochlea, Figure 22). History: While playing, August 19, she fell, and in an effort to break the force of the fall, extended the hand, she received the injury. Pain and swelling about the elbow. Child stands with forearm abducted in supination. The internal condyle is nearer the olecranon than is the external condyle when the arm is extended. Pain is most marked over the internal condyle. She is unable to completely extend the arm. Five weeks after the accident the photographs (Figures 23 and 24) were taken. There is no deformity and no limitation of motion in the elbow.

Case X—Charles R., colored, age 6 years. He was first seen at the clinic September 4. One week before coming to the clinic he fell from a gallery. The mother was told that there was a dislocation, but no treatment of any kind was instituted. Examination revealed the following: A distinct prominence over the condyle, loss of carrying angle, and limited motion at the elbow. The radiograph (Figure 25) confirmed the diagnosis of a fracture of the external condyle. On October 15 it was possible to flex the elbow to about 45 and to completely extend the arm. There was no deformity.

Case XI—Edwina R., age 7, white. Diagnosis: Fracture of internal condyle (Figure 26). History: She was pushed forward while playing. Immediately after the accident happened she was taken to the Touro, where Dr. Dicks saw her, and I ob-

tained the following facts from him: She was supporting the injured arm in the palm of the uninjured hand. There was a loss of the carrying

Fig. 18, Case 8.

angle. Pain was most marked over the internal condyle and over the olecranon.

October 16—She can completely extend the arm and flex it to a marked degree.

October 28—The radiograph shows a perfect

Fig. 11, Case 5 Six Weeks After Injory.

restoration of the bony parts. (See Figure, Case XI.)

DISCUSSION.

Dr. Lawrence Scott, Birmingham, Ala.—I had a case recently referred to me in which a man had a displacement of the radius backwards and upwards, and a fracture in the ulna with a perfectly stiff arm, referred for correction. X-ray photograph showed that the ulna had shortened up and pushed the radius out, and it was impossible to put that in place unless the radius was lengthened out. It was a question of estimation more than anything else. We had to take off the head there. I think there are many cases around the elbow that if a man takes a radiograph he can do better work.

Last year, at the Association, I made a remark about the use of rubber band in the after treatment

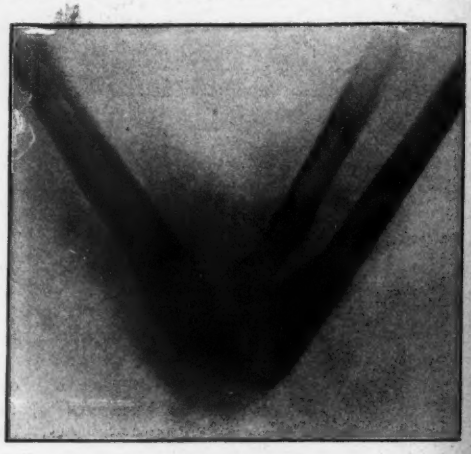


Fig. 15, Case 7. Eight Weeks After Injury.

of the elbow joint. When you have a flexion deformity—of course, some motion left—I have been using for a long time a splint, fastened to the back of the arm, made of wood or anything else you want to, which is bound around the arm with bandages held tight to the elbow joint; then I take a piece of automobile tire or an ordinary rubber band and wrap it backwards and forth around the end of the splint, and give it just sufficient force for the patient to say that it hurts. Of course, this is simply a spasmodic or muscle-contraction deformity. Leave that bandage on half an hour and probably the first application it will go down one-quarter, and more and more each day. I have tried that in many cases, and it is so much better than vibration.

You cannot continue a constant pull or a constant push with your hand as you can with a rubber band. Let the rubber band stay there for a sufficient length of time and the band does the work. It hurts the first day or two. The patient can do it at home. Of course, that would not be applicable in a case that had not had any work done around the elbow joint. It is simply for a simple contraction or fibrous obstruction or a habit.

I had a boy patient recently who had a habit of carrying his arm crooked, and the first application cured the boy of the habit. He simply saw the arm was not so sore as he thought. It helps the patient to find out that the arm can be used. They are afraid to use it.

Dr. Michael Hoke.—The elbow fractures are difficult, as we all know; and, as in all fractures, you have got to get the fragments together and then hold them together. It doesn't seem to me we ought to have any fixed position of putting the arm up. In many of these fractures, putting the arm up straight in plaster is a very desirable thing. One should not be afraid of getting a stiff joint. Most of the limitation of motion is the result of callus being in the wrong place. The straight position, if you just think about the mechanics of it, acts better to hold the fragments in apposition, once they are put in place, than does the flexed position. There are some fractures in which it seems to me it is wise to hold the arm straight for that particular reason.

There is a scheme by which you can accurately hold the break as if you had your finger on it. Make plaster ribbons one-fourth of an inch thick by reduplicating a plaster bandage. Reduce the fracture and mold with the hands until the fragments are in apposition. Traction with arm straight is made. The ribbons are laid on, one on each side and one

Fig. 16, Case 7.

in front and behind. A few turns of a bandage are made over them. The advantage is that one can make a snug fit without obstructing the return circulation.

When the humerus is broken, if you flex the arm, the parts are so loosely held that the motion of the shoulder joint would dislocate the lower end of the shaft of the humerus and the fragments will become separated. So that there are a lot of them, it seems to me, in which you ought to take in the shoulder joint and the chest as well as the arm. It seems to me that I see a lot of bad jobs that have been done from following the text-books. In every instance it appears that the difficulty has been that the physician didn't clearly see the mechanical principles; that he couldn't think independently about the nature of the mechanical problem.

Dr. Cohn (closing).—In answer to Dr. Hoke, I just want to say that, although I am not a draughtsman, I will make an effort to do something on this board. (Drawing showing the attachments of muscles about the elbow.)

We must not forget the fact that the triceps muscle is attached to the olecranon process, and that the flexor muscles of the forearm have their origin on the internal condyle; that in extension those flexor muscles are tending to bring the lower fragment into the bend of the elbow and increase your deformity. If you flex the arm you relax that and allow the lower fragment to go back "into the position of the greatest stability." (Ashhurst.) The nearer we can approach nature in her effort to get us well the better will be our results. At any rate, the results of Ashhurst, reported in his series of some one hundred cases, show 94 per cent of perfect cures. Cotton, using an obtuse angle, got 25 per cent of perfect results, and nowhere do we find the statistics show such good results obtained by this position of extension.

A good many men tell you they use extension, but you will not find anyone giving statistics of his results. Then another thing—it is much easier to get flexion and extension after the flexed position than it is to attempt to do something after the lower fragment has been pulled into the bend of the elbow by these lower muscles.

This paper was not intended to include any fractures of the bones of the forearms, but just those portions of the lower end of the humerus which form the upper portion of the elbow. I believe that the best indication that the hyperflexed position is the best is that it is the position of greatest natural stability.

NAIL OCCLUDING THIRD BRONCHIAL RAMUS; UPPER BRONCHOSCOPY. RECOVERY.*

By J. W. Jervey, M.D.,
Greenville, S. C.

A great many successful cases of upper bronchoscopy for the removal of foreign bodies of various kinds have been reported in this country and abroad. Individual technique and instrumental modifications vary within rather broad limits, but the principle of the illuminated tube, through which manipulations with long, delicate instruments are performed, is the basic essential to the *armamentarium chirurgicum* for the operation.

The chief scientific interest and fascination of this work, outside of the saving of human life and the delicate performance of a difficult surgical procedure without the sacrifice of living tissue continuity, lie in the fact that each case, in its presentation for attack, is likely to be imbued with differing problems all its own.

---

*Read in the Section on Ophthalmology at the sixth annual meeting of the Southern Medical Association, Jacksonville, Fla., November 12-14, 1912.

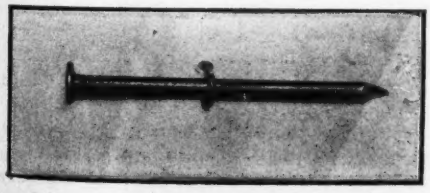
To the surgeon who would undertake this work, then, the talent of mechanical ingenuity is a valuable asset, indeed, and, besides, he must possess practical skill and experience; and to attain successful and least complicated results, he must be an exponent of consummate manual dexterity. Many a patient has been relieved of a foreign body in the lower air passages, only to succumb to complications attendant upon rough and unskillful manipulations or ill-chosen adaptation of technique. On the other hand, many foreign bodies in the air passages, owing to the nature of the intruders and the manner and place of their lodgment, are easy and simple of removal at the hands of the moderately experienced worker. Yet it is to be remembered that at no time and in no case is the introduction of a bronchoscope to be undertaken without the greatest caution and circumspection, for the accidents that may happen and the results that may accrue therefrom constitute a responsibility that cannot be regarded lightly by those whom experience has taught. The clinical history of the following case, especially remarking the age of the child and the size and position of the foreign body, I have thought to be of sufficient interest to put into the permanent record:

Charlie Ray, white male, aged 3½ years, was brought to my office on August 14, 1912, by Dr. H. T. Scott, of Cowpens, S. C., with a history of having inspired a nail on August 9, five days previously. An X-ray examination by Dr B. B. Stedly, of Spartanburg, on August 13, showed a large wire nail, lying diagonally, head down, about the center of the chest. An X-ray examination (fluoroscope) and photograph were made for me on August 14 by Dr. T. R. W. Wilson, of Greenville, showing the nail lying as seen in the accompanying illustration. Owing to an accidental shortage in the supply of X-ray plates, an ordinary photographic plate was used, and the details of the picture were somewhat indistinct. The negative was, therefore, retouched, and following the evidence obtained by physical examination and the bronchoscopic findings, an approximately schematic tracing was made of the trachea and bronchi, showing the relations of the nail to the passages. A physical examination was made by Drs. Davis Furman and F. Jordan, of this city. The classical symptoms of an active pneumonia were present. Temperature, 102.8; pulse, 146; respiration, 50; dullness and restricted function over lower portion of right lung; cough and rusty sputum. The whole appearance was that of a very sick patient, with anxious facies.

One hour before operation a small dose of morphine and atropine was administered hypodermically. Operation was begun at 4 p.m., under chloroform anesthesia of a degree light enough not to abolish the cough reflex. (For various reasons my preference in this kind of work is for the Jackson method of bronchoscopy, and, accordingly, his instruments and technique, with inconsequential individual modifications, were used in this case, the only exception being in the laryngeal speculum. I prefer the open speculum, without a slide, as being somewhat simpler and equally as efficient in my limited experience.) Upper bronchoscopy was performed, the five millimeter tube being used, and the nail was located without difficulty and demonstrated *in situ* to the physicians present. It was at once apparent that the point of the nail, directed obliquely upward, was imbedded in the left side of the tracheal wall, a half inch or more above the bifurcation, having evidently been forced into this position by the patient's violent expulsive efforts. Knowing the length of the nail from the information afforded by the X-ray, and the clinical symptoms as shown by physical examination, the reasonable deduction was made that the head of the nail, directed downward, had passed, certainly, the bronchial ramus to the upper lobe of the right lung, and had at least partially passed the ramus to the middle lobe, and must probably be resting in or about the ramus to the lower lobe (see schematic tracing of air passages in illustration). The secretion in the passages was very profuse, and was the source of considerable annoyance and delay, the cough reflex being of invaluable assistance in expelling it, while large cotton swabs were rapidly thrust below the distal end of the tube and brought swiftly back, like a pump valve, removing large quantities of thick, "rusty sputum." The size of the nail was too large to admit of the opening of forceps widely enough through the small tube to be of any assistance in manipulating for the removal of the foreign body. Recourse was had, therefore, solely to the blunt wire hook; and the interesting question arose in the mind as to how to extract with such an instrument a straight-sided, end-presenting body from such a cavity when the distal end of the said body—the only point at which purchase could be secured—was out of sight, and, what was still worse, out of any reasonable expectation of reach. The problem was solved in the following way: The point of the nail, which was not very tightly imbedded, was released by gentle manipulation downward. This proved tedious and trying, as downward pressure on the nail invariably excited the cough reflex, and the cough would instantly thrust the nail back into its first position of diagonal impingement. Patience triumphed in the end, and as the point of the nail was released the bronchoscopic tube was slid quickly down so as to include the nail point in its orifice, preventing a return to the position of election. The

tube was then gently pressed onward until about half of the length of the nail was included in its lumen. The hook was then laid alongside of the nail and firmly rotated on its long axis so as to press the nail snugly to the inner wall of the tube—the rust on the nail being of great assistance by the considerable fricton offered—and hook, nail and tube were withdrawn together in one movement and without mishap. The time consumed in actual operating was approximately thirty minutes, and but for the excessive secretion and almost incessant cough it would have been considerably shorter. The patient was at once put to bed, and active combative treatment for the pneumonitis was instituted. There was no shock or other post-operative complication. There was a remarkably rapid rally immediately following the operation, the temperature two hours later being 98.6; pulse, 120; respiration, 38. At 8 o'clock of the following morning the temperature had risen to 100; pulse, 118; respiration, 50.

The father of the child, a Boeotian bogtrotter, appeared at the hospital at this juncture, and, despite the emphatic objections, protestations, pleadings and finally threats of the superintendent and nurses, insisted upon taking his child home. The little patient, in this critical condition, was taken on a fifty-mile railroad journey to his home. Naturally enough, there was a recrudescence of the pneumonia, of severe character, running a typical course of about nine days, followed by convalescence, reported to me by Dr. Scott, the attending physician, without further complications.



Actual Size of Nail.

DISCUSSION.

Dr. J. W. Jervey, Greenville, S. C.—I do not want to add anything, except to say that it might be of interest to you to hear that one of my friends from North Carolina approached me yesterday and said: "I see that you are reporting an upper bronchoscopy case that seemed to be very satisfactory. I bet you did not get a cent for it." "You are right," I replied. "I did expect some payment, but it was in the nature of a promise from the child's father that he would not vote for Gov. Blease; but inasmuch as the latter was elected, I should not be surprised if the man felt sore and went back on his promise."

Dr. C. A. Thigpen, Montgomery, Ala.—Dr. Jervey is to be congratulated on his successful operation. I do not think the radiograph does his case justice. I had a very similar case to his in October, 1911. It was that of a child who had inspired a sixpenny nail, and the radiograph showed the nail in the same location, in the right bronchus. It was removed by upper bronchoscopy, and the child left the hospital well on the fourth day.

Dr. Feingold.—Is there any more discussion? If not, Dr. Jervey will close.

Dr. Feingold.—We ought to congratulate Dr. Jervey on his fortunate result, but I think that it was due principally to the resistance of the child. I am sure that you have all had similar experiences. The discussion will be opened by Dr. Thigpen.

TREATMENT OF CHRONIC LARYNGEAL STENOSIS BY SPECIALLY DEVISED INTUBATION TUBES.*

By Homer Dupuy, M.D.
New Orleans, La.

Would one be convinced that the last word has not yet been said in our attempt to master chronic laryngeal stenosis in children let him be confronted with a case presenting the pathetic features of such a condition.

Then will one's patience and vigilance and mechanical ingenuity in devising the means to combat the obstructions be taxed to the utmost.

In a paper read in the section on oto-laryngology of the A. M. A. meeting, 1912, I discussed the treatment of various forms of laryngeal stenosis, both as it occurred in children and in adults. On this occasion I propose dealing entirely with chronic hypertrophic laryngitis as it occurs in children. This contribution is based on the study and treatment of six cases, which have come under my personal care. Five of these were recorded in detail in the paper referred to. The sixth case, which was still under treatment in June, 1912, had a successful outcome.

Katherine Spenser, two and a half years of age, was successfully intubated by Dr. Perrault, of Jennings, La., on March 5, 1912. The microscope evidenced the fact that the condition causing the stenosis was of diphtheritic origin. Serum therapy begun on March 5; within a week the patient received a total dosage of forty-five thousand units of antitoxin. During a period of twenty days two removals of the intubation tube required two reintubations. The gradual return of the stenosis, despite the general improvement, necessitated reinsertions of the tube at periods varying from a few hours to several days. By March 26, 1912, the original disease had undoubtedly spent its force, and yet the laryngeal obstruction continued. She was then brought to me. She presented marked dyspnea; the intubation tube was evidently not fulfilling its object. This dyspnea had only been present twenty-four hours. Inspection showed the tube displaced below the vocal chords. To reach it a tracheotomy was practiced and the tube removed by pushing it from the tracheal opening through the larynx. The tracheal wound was closed and a Dupuy & DePorter special intubation tube inserted. This tube was never coughed up, and during the whole period of intubation the child led a perfectly normal life at the Hotel Dieu. The removal of the tube on April 3, 1912, was followed by perfect respiration for five days, when the gradual return of the stenosis made it imperative to reintubate on the eighth day. For fifty-one days she was subjected at the hands of Dr. DePorter and myself to four extubations and to four reintubations. At first removal of the tube was followed by normal breathing, the hoarseness only persisting. In two instances, on about the eighth day, noisy breathing would set in with a progressive return of the stenosis, during thirty-six to forty-eight hours, which brought the respiratory embarrassment to such an extreme that reintubation became necessary, and always with the happiest results. This period of perfect breathing without the tube lengthened itself out to eighteen days, when an acute bronchitis seemed to excite a similar progressive recurrence of the obstruction, which required reintubation. On May 27, 1912, extubation. Since then, to this day, nearly one month, normal breathing has generally obtained, with the exception of a little harsh breathing incident to attacks of acute bronchitis. Information recently received gives assurance that this little patient is enjoying perfect health.

The most striking feature presented by this case is the progressive yet certain return of the dyspnea, necessitating mechanical relief. This is one of the distinctive characteristics of a chronic hypertrophic laryngitis—the slow and progressive closure of the lumen. When the patient is apparently doing well, this return of the stenosis may occur many days after the last extubation. We may, however, witness a sudden return of the obstruction either following an extubation or an auto-extubation. This is not, to my thinking, due to the actual return of the infiltration. The sudden dyspnea is the result of an adductor spasm of the glottis incident to the prolonged pressure of an intubation tube, which, ultimately, must prove a disturbing element to the nervo-muscular mechanism of the larynx. The want of self-control and the fright natural to the child may also precipitate just such a crisis.

Right here the question of causation naturally thrusts itself. It is pertinent, as the mode of treatment will hinge on our conception of the cause. While the original infection may be diphtheritic, the hyperplastic changes present in this form of laryngitis should be considered a sequence. Nevertheless, hypertrophic laryngitis has a distinct pathologic entity. The chief feature is a diffuse-hyperplastic process which may in time invade the cartilaginous framework of the larynx. The ulceration of the parts incidental to long-continued pressure of a tube must certainly prove a disturbing element. But this is a mechanical result and not the disease itself. The narrowing of the glottis and of the subglottic area is essentially associated with deep-seated exudative inflammatory changes. Alterations of this character explain the long-delayed yet progressive return of the obstruction.

This form of infiltration seems especially prone to affect the subglottic region. The constriction of the lumen at this point offers mechanical difficulties

*Read in the Section on Ophthalmology at the sixth annual meeting Southern Medical Association, Jacksonville, Fla., November 12-14, 1912.

which are not effectively overcome by the O'Dwyer tubes. Again and again the tube bobs up like an oiled cork from the mouth of a bottle. If successfully introduced and retained in position, there is, nevertheless, a constant tendency to auto-extubations. This recurs so frequently, and is at times so life-threatening before aid can be instituted, that we rush into the mazes of a tracheotomy. This has only plunged us deeper into difficulties. What with the possible collapse of the trachea above our canula in young subjects, what with the cicatricial changes and consequent deformities in the upper trachea, and it is evident that tracheotomy retards, if it does not actually prevent, the final cure.

Long-continued dilatations by means of intubation offers the most reasonable prospect of success. My own observations lead me to the conclusion that hypertrophic laryngitis in children results in hyperplastic formations which are more frequently focussed in the subglottic and extreme upper tracheal regions.

Long pressure, to be effective, must be concentrated at these points. The Dupuy-DePorter low-retaining swell intubation tube is so constructed that the retaining wall impinges on that portion of the subglottic area which is the seat of the constriction. My associate, Dr. DePorter, and myself, with six years' experience in the use of these special tubes, have not only overcome the stenosis of chronic type, but have greatly reduced the possibility of dangerous auto-extubations. With the O'Dwyer tubes we are, in this form of stenosis, constantly exposing our patients to auto-extubations. In fact, it is this very thing—the extubations—which has too often driven us to tracheotomy, and perhaps to the perpetual wearing of a tracheal canula.

Now, as to the manner of proceeding in the use of these tubes. Long retention of a tube, either following, say twenty-one days, for the relief of acute laryngeal constriction, means that the affection is merging into the chronic type. Extubations and auto-extubations, followed by a return of the stenosis, indicate to me the use of special tubes for dilatation. As our tubes are proportionately larger in all diameters than the O'Dwyer, a tube next in size to the one last worn by the patient may prove the best fit. Resistance will invariably be encountered in the subglottic area, the point of the constriction. This must be steadily and gradually overcome by the use of the largest tube the parts will accept without the application of undue force. When return of the stenosis after extubation, be it an immediate or a delayed recurrence, necessitates a reinsertion of the tube, use the O'Dwyer tube first; then in about ten minutes remove it and insert the special tube. This is advisable for the reason that the infiltrated areas contract to such a degree that there is great resistance to the passage of the largest tube. Beginning the dilatation with one number or two numbers of an O'Dwyer tube smaller than the age index will usually suffice in a few minutes to enlarge the lumen. Then we can with deliberation and safety introduce our special tube. We use a Farroud instrument both for the introduction and removal of our tubes.

The house of Meyrowitz of New York, through its skilled artisans, has intelligently cooperated with me in devising these special tubes.

Special Intubation Tube.

Conclusions.

(1) When a laryngeal stenosis is the result of hyperplastic changes, some form of dilatation is the most logical method of overcoming it.

(2) Gradual, systematic dilatation by intubation offers very favorable prospects of success.

(3) The tube with a low retaining swell and a wide head would seem to meet a want in the treatment of this form of stenosis.

(4) In children, hypertrophic laryngitis is largely responsible for a chronic loryngeal stenosis.

(5) In this particular affection tracheotomy is more apt to induce connective tissue changes than to effect a final cure.

DISCUSSION.

Dr. S. S. Ledbetter, Birmingham, Ala.—When the

writer of the paper asked me yesterday to discuss his paper, I told him that I had had no experience in that particular class of work—I mean the using of tubes to correct these conditions. I have done more than two hundred intubations, all told. I do not remember just how many, as I did not make a list of them. Out of these I have had possibly half a dozen cases that ran over ten or twelve days. One case ran as long as four weeks. Only two cases really gave me any considerable trouble. These were the only two cases that I should say would call for the use of that kind of treatment. In these cases I did tracheotomy. In one the child, about six or seven years old, was intubated, the tube being removed on the fifth day, and after about twenty minutes' interval the dyspnea became so considerable that the tube had to be replaced. The second removal of the tube also came very near to being disastrous. After the tube had been removed and the gag taken out of the child's mouth I saw that that the patient was making desperate efforts to breathe and getting absolutely no air. I immediately tried to replace the gag, and could not get the mouth open. I thought that the child was gone. I happened to see a spectacle case lying on the mantel. It was a shell-shaped case. I got it between the teeth and pried them open so that I could get the gag back into the mouth. By that time the child was unconscious and not breathing at all. The tube was rapidly replaced and artificial respiration started up, and eventually the child was restored. The tube was allowed to remain in for five days more and then removed again. I took the precaution this time to leave the gag in the mouth. There was no respiration, and the tube was put back without being removed from the extractor. It was replaced in the larynx, and then all was right. After that I did not consider intubation any further, but did a tracheotomy. This child wore that tracheotomy tube for three years, and never did get so that he could get along with the tracheotomy tube closed. He died three years after the operation, having had a rather remarkable history. A year or so after the operation he had developed measles. There was considerable swelling of the tissues, with obstruction and dyspnea, and it looked as though he would die from the effect of the choking of the tubes in the trachea. He pulled through, however, but six to twelve months later he developed scarlet fever and had the same trouble over again. He pulled through that also. A few months afterward I heard that the child was dead and found that he had had meningitis. I thought that he had had his share of trouble.

In the other case in which I had the same experience, although not to such an exaggerated extent, when I took the tube out the child's breathing would be hard and labored. On one occasion I left it out for two days, and during this period the child could take no nourishment. After thirty days a tracheotomy was done. The tube was allowed to remain in for a couple of weeks and was then removed. After a short time dyspnea increased and the tracheotomy had to be done over again. The case covered a period of six months. These were the only cases that could be termed chronic and to which Dr. Dupuy's treatment might be applicable.

Dr. U. S. Bird, Tampa, Fla.—I should like to ask Dr. Dupuy what effect the tube has on the voice.

Dr. Homer Dupuy, New Orleans, La. (*closing the discussion*).—Of course, I expected no lengthy discussions. Such cases are infrequent and experience necessarily limited. Fate seems to throw such cases into our hands to test the surgeon's ingenuity. These six cases have certainly impressed me with the fact that stenosis of this character is one of the Rubicons of laryngology. There is only one valuable contribution on the subject, that by John Rogers, Jr., of New York, and his treatment is prolonged intubation. He realized, as everybody does who sees these cases, that the auto-extubations are so frequently life-threatening that there must be something devised to keep the tube *in situ*. Then the hard rubber tube with silver or rubber pins seemed to be the device that met the indications. That device, however, is complicated; so in my six cases my ingenuity was tested to the utmost until I hit on our special intubation tube with a low swell. Laryngostomy, a French procedure which is so formidable in character and so unfeasible in children, consists in making a new pathway. It means the changing of dressings every few hours. When one considers the age of the child and the impossibility of a frequent change of dressings, as well as the fact that the patient must be quiet for days and weeks and months, one can see that laryngostomy will not solve the problem. It must be some from of dilatation, either intra-laryngeal from the start or merely dilatation below. Schroetter has devised a means of dilatation from below. The tubes are awkward and painful, and are inapplicable in children; so that my device would seem to prove a welcome thing. I do not say that it is the last word on the subject, but if fate is as unkind to you as it has been to me in thrusting into your hands the care of such cases, you will welcome anything that promises some relief.

As to the voice, in this last case, six weeks after the last extubation, her voice was clearing up. In the cases in which the patients have lived—three besides the one now reported, which makes four—the voice has returned to normal. It means either a victory by dilatation or a consignment to the perpetual wearing of a laryngeal canula.

CAUSE, PREVENTION AND CURE OF DEAFMUTISM.*

By Maury M. Stapler, M.D.,
Macon, Ga.

In speaking of deafmutism, I shall include all who are so deaf as to require special teaching to learn articulation.

A few years ago deafmutism was not a live subject. No one knew a primary cause or believed the possibilities of prevention or cure.

These days otological gatherings seem wanting where there is no discussion of the subject, and before the Medical Association of Georgia this year four children who had been deafmutes were

*Read in the Section on Ophthalmology at the sixth annual meeting of the Southern Medical Association, Jacksonville, Fla., November 12-14, 1912.

exhibited as a hearing, talking clinic by Dr. R. C. Woodard, of Adel, Ga., whose daughter was one of the clinic.

Deafmutism cannot be diagnosed with certainty before the age at which a normal child should begin to speak, though physician and parents may strongly suspect such a condition before that time.

That a larger percentage of deafmute children may learn to speak without hearing, and to read the lips, is a well-known fact; but that we can sometimes establish the hearing and have some of them hear and talk almost normally will be news to a large part of the medical profession.

Some physicians have the idea that since deafmutes do not talk because they do not hear, it would be needful to only establish hearing to have them engage in conversation. The fact is they would not, and children who pass over the first eighteen months after birth without hearing, during which time nature establishes a primary register of words, or if they hear only imperfectly during any considerable part of that time, will, I believe, experience difficulty in learning to talk; and though they may hear perfectly at the end of eighteen months perfect articulation may be retarded. Under my care at the present time are ten who were deafmutes and now have enough hearing to learn articulation aurally. Some of these hear almost normally, and the hearing may be permanent; yet if an experienced teacher does not take charge and establish a vocabulary, the hearing will be put to no practical purpose and the patient will use manual signs. Because of this, I have cooperating with me an experienced oral teacher. The sooner deaf children are treated the more quickly the handicap will be removed.

It is not impossible to get results, however, in some cases of long standing. The first case successfully treated by me was a young man sixteen years of age, who gave a congenital deafmute history. With one ear he now hears a watch tick at three inches, and hears only loud noises with the other. His hearing was established in 1898, and his vocabulary is limited because he has never been taught to articulate. Of those whose hearing has markedly improved some gave a history of congenital deafness, others of acquired deafness. Some gave evidence of partial hearing. In others it was not possible to demonstrate any. In some the ears appeared normal, others had inflammation of the tympanic membranes and middle ears. Only two had discharging ears, and one of those had the membranes to rupture after operation for adenoids. All had diseased adenoids. Some had had no treatment, others had been to the best otologists. The normal appearing ears of some would not respond at all to treatment, and the unfavorable seeming conditions of others healed promptly. Some who now hear and talk were pronounced hopeless by otologists of renown.

I relate these things to show that appearances in these cases are deceptive, and we cannot tell which will improve until they have had treatment, and there are no medical *authorities* on this subject. The books of Holger, Mygind, H. Schwartz, Politzer and others inculcate the belief that there is little to be hoped through treatment. They rely on the showing made by more than a hundred autopsies upon deafmutes, in which there was found destruction of the labyrinth, the essential organ of hearing.

I have looked up more than a hundred of these autopsies with a view of learning the average age of the victims, and I found it to be more than eighteen years. Any condition would likely become incurable in eighteen years. What malformation, loss of structure or destruction might we not expect to find in a disease process beginning soon after birth, before the bones are fully developed, and extending over eighteen years?

Suppose the condition was specific iritis, what sight would you expect to find after eighteen years? Yet such an iritis is curable if treated at the inception.

I have not found in the books of any so-called authority on the subject of deafmutism a definite cause assigned for the inflammatory process found in the autopsies made on deafmutes. The cause and the treatment of deafmutism are practically lacking in these books. However, I wish it known that I think these investigators did well with the light before them. Most of them wrote before Meyer read his paper on adenoids. I speak of their writings and not to criticise, only to show that their autopsies are valueless when used to combat the theory here advanced, in that they do not prove that the labyrinthitis was not at some time curable. A theory of deafmutism would be incomplete if it did not assign a reasonable cause for the labyrinthitis which is found in about 85 per cent of all deafmutes. If causes are stated the removal of them and carrying out of the details of the treatment should give hearing to deafmutes. The theory the writer thinks he has proven is as follows:

Adenoids partially close the eustachian tubes and cause the air in the middle ears to become rarified, and the pressure on the tympanic membranes becomes greater from the outside. The effect of this unequal pressure is to force the membranes and ossicular chains inward upon the labyrinth. This puts the stapedius muscles on tension and finally overcomes their contractile powers, and the irrita-

tion caused thereby brings forth a flow of plastic serum, and an inflammation is set up in the labyrinth. The author thinks this is a direct chain of cause and effect. Remove the adenoids, open the eustachian tubes, get the air pressure equalized, raise the ossicular chains from the labyrinth and the inflammation in the labyrinth may recover. Put the patient under an oral teacher and the result is hearing and speech. The books report one or two sporadic cases where deafmutes have greatly improved in hearing with and without treatment. Histories of the cases show that the hearing came as the child approached puberty, when the adenoids tend to atrophy, the bones develop and the eustachian tubes chage. In this way nature takes every step necessary, except one, to relieve the deafness. She removes the adenoids, opens the tubes and equalizes the air pressure. We see many deafmutes where nature has done this much. These ears appear normal, but nature has failed to raise the ossicular chains and permit the labyrinthitis to recover. The stapedius muscle is nature's reliance for this last act, and has lost its power. Only an accidental circumstance, such as sometimes dislocates a cataract and gives sight, has probably moved the ossicular chain and given hearing in the cases the books record. Removing the adenoids alone has not given hearing to deafmutes, and therefore adenoids have not been reckoned as a cause.

In stating the cause of deafmutism we indicate the treatment. Remove the cause. That, however, is not all that is necessary. Of the cases now under my care who have greatly improved in hearing, none would have learned articulation without a teacher, and an acute coryza might cause any one of them to lapse into deafness again. So it is necessary to teach them and to keep up the treatment daily for some time in many of the cases if the handicap of deafmutism is to be relieved.

Deafmute parents transmit a predisposition and their children should be examined for adenoids and the eustachian tubes inflated every six months until they arrive at the age when speech appears. Any child who has even a slight labyrinthitis before he arrives at the speaking age may have his speech delayed or imperfect because the hearing and primary register of words has been interrupted. Therefore we should suspect labyrinthitis in children who have delayed speech, although it cannot be detected, and may have been transitory.

In stating the theory, I said partial closure of the eustachian tubes, because entire closure will cause rupture of the tympanic membranes or force open the eustachian tubes and relieve the pressure before the contractile power of the stapes is lost. These are nature's ways of preventing deafmutism. Were it possible to regulate the amount of air entering the middle ears through the eustachian tubes, deafmutism might be established at will in small children, the idea being to let in just enough air to keep up such pressure as would overcome the stapedii without rupturing the membranes. Those cases where the stapes is too firmly fixed by swollen tissue and plastic serum will not be improved in hearing by treatment. Neither will those deaf from meningitis, though in some cases a mistaken diagnosis is apt to be made. With a view of finding what percentage of deafmutes would get useful improvement from my method I held classes two school terms. Seven in each class were taken without selection, treated daily and kept under an oral teacher. Three of each class were given useful hearing. Those who remained under the care of the teacher learned articulation. All who improved did not remain the full term. Most deafmutes retain hearing when once established, though it is not impossible for them to lapse.

It might be desirable that these claims be proven through some deafmute institution, and the records of the Macon Medical Society, of Bibb County, attest the strenuous efforts I have made to have it so. Some may hold the idea that the teacher and not the treatment has given the results; such a belief is not well founded, because some of the patients who improve have never seen a teacher, and in no school at home or abroad have I found any results comparable to those shown before the Medical Association of Georgia.

Were it not for the tangible, visible facts endorsed by those physicians who have seen the cases gradually improve day after day as they came for treatment, were the cases of improvement very rare or the improvement of hearing only slight, I would not feel justified in speaking of them.

That members of the medical profession may satisfy themselves of the beneficial effects, I have brought before the Association, Robert Roberson, of Elberta, Ga. Robert gives a history of deafmutism from birth: When six years of age he was taken to Drs. Peet and Cunningham, of Macon, who operated for adenoids and sent him home. After the operation, and probably as a result of lip reading, he learned to say a word or two. In two years there was no apparent benefit and he was put under my care.

After demonstrating his lack of hearing, and speech to one or two local practitioners, I decided there was still some obstruction to the eustachian tubes, and I operated with a view of clearing the fossa of Rosenmulla. After this operation I sent him home for two weeks, but when he returned there was no apparent benefit. I then kept him under

treatment for two weeks, using my suction apparatus which I have brough along for you to see.

Improvement began at once, and he soon had hearing such as he has now, so nearly perfect he was denied entrance to the Georgia school for the deaf. His vocabulary, while sufficient for most of his present needs, would be greatly improved if he were able to go to Miss Arbaugh's school for several months.

Soon after he was given hearing, he was under an aural teacher for six months and improved rapidly. He now attends the public school at Elberta, Ga. I see and treat him two or three times a year. He has been under my treatment for three years. His articulation is not so good as some of those who came for treatment about the same time, and have gone three school terms to a special teacher. Along with the instrument I have brought glass models to demonstrate how the ossicular chains may be raised from the labyrinth and put in position to obtain the support of the stapedii muscle.

I present to you a new cause and theory of deafmutism covering possibly eighty-five per cent of the cases. I show to you an instrument that will perform what no other mechanism in our armentarium will perform without a surgical operation, raise the stapes from the labyrinth.

The entire chain finds support and practical fulfilment in the boy here shown, Robert Roberson, once a deafmute, now having hearing and a limited but normal vocabulary, giving expression to his needs without the use of manual signs.

Dr. Stapler—I should like to show you that boy. Any word that he knows he will respond to; and almost any word that he does not know he will at least respond to the sound of. I wish you would test him.

Dr. Homer Dupuy, New Orleans, La.—What is your name?

Robert—Robert.

Dr. Pupuy—What is your age, Robert—how old are you?

Robert—Twelve.

Dr. Dupuy—Where do you live?

Robert—At Elberta (Ga.).

Dr. Dupuy—Have you a brother? (No answer.)

Dr. Stapler—He does not know the word "brother."

Dr. Iedbetter—Pick out some words he does know.

Dr. Stapler—Ask him almost anything.

Dr. Dupuy—What is your last name, Robert?

Robert—Roberson.

Dr. Dupuy—Do you go to school?

Robert—Yes.

Dr. Dupuy—Say "S. C. G."

Robert—S. C. G.

Dr. Stapler—This shows that taking out adenoids will not do any good, unless you get the children to have a vocabulary. Here is the instrument I use to demonstrate the effect of the adenoids. You can blow into it all you are able, and that is what the soft palate will sustain. I will put the instrument into his ears. (He did so, and blew into the instrument.) I claim that this see-saw movement, back and forth, makes the ossicular bones move back and forth. I can put on a suction pump, but I would pull up the soft palate. If you hitch up these two little tubes, made to represent the ears—one to represent the middle ear, and one the labyrinthian side—if you hitch these two and put a little water in, it will make bubbles down here, but will not move over there. I put a little soapy water in there.

DISCUSSION.

Dr. Feingold—Gentlemen, I think that we all owe Dr. Stapler thanks for his paper, which is now open for discussion. Is there any discussion? I wish, if there is, it would be open, so that we may all get the information. I am sorry that Dr. Stapler's labor meets with so little discussion, but I am sure that we all envy him his results. I should like to ask him a question. I should like to know how he arrived at the diagnosis of deafmutism; because that is conditional upon the result of the treatment. How did Dr. Stapler know this when the patient was a deafmute?

Dr. Dupuy—I should like to know how Dr. Stapler arrives at the conclusion that these cases are absolute labyrinthitis. In a pure case of labyrinthitis there are some disturbances in co-ordiination. Vertigo, nystagmus, etc., are present. While I am not doubting the results at all, I think Dr. Stapler has given a wrong interpretation to the condition. Again, we know that some cases of deafmuteism are of central origin. The anditory centers may be undeveloped, and yet he makes the remarkable statement that eighty-five per cent of these cases are cured. These were not instances of labyrinthitis.

Dr. Stapler—No; I said that eighty-five per cent had labyrinthitis.

Dr. Stapler (closing the discussion)—In reply to the question as to how one arrives at the diagnosis of whether a child is a deafmute or not, I would say that it is well understood that if a child does not respond to certain noises or calls, or show some sign of hearing, and also does not speak at the age when a normal child does speak, it is usually considered that he is deaf and mute. Before the eighteenth month it would not be proper to diagnose him as a deafmute. After the eighteenth month, we make this diagnosis by the fact that we cannot demonstrate any practical degree of hearing and cannot get any response in words.

Robert Roberson was eight years old when he came to me, and no special tests or skill was needed to make the diagnosis.

As to the labyrinthitis, I was basing that statement on the generally accepted idea given by the text-books that had gone into the autopsies of these cases. In these autopsies the claim is that there was a labyrinthitis in eighty-five per cent. That is the foundation upon which I base my claim that eighty-five per cent are caused by labyrinthitis; because we know that ordinary inflammation of the middle ear does not shut a child off and show such a pronounced effect as that shown in a deafmute. We may have a child for two years, and, all of a sudden, he stops

speaking; yet the middle ear is normal. You cannot get him to speak the words that he has been speaking. These cases usually shut off pretty suddenly. For that reason, I think that it is labyrinthitis; because we see no evidence of middle-ear trouble in these cases when they first begin. Of course, we cannot be certain that it is a labyrinthitis; because you cannot get, in a deafmute child thus afflicted, whose other faculties are usually below the normal, the signs that we get in a grown person—nystagmus, etc. These children will not respond to these tests, unless you have been able to get them into school aand train them. I bring the patient before you in order to show that something can be done in these cases. This is not a selected case. I have some patients that are better than this one.

Question—You say that eighty-five per cent of deafmutes have labyrinthitis; how do you determine that fact?

Answer—Such a statement is necessarily based upon the autopsies that have been made and reported of deafmutes. The scientific tests made on normal subjects, such as rotation, to show nystagmus, the various tuning fork tests, imbalence, nausea and dizziness, can not be determined with any degree of reliability in young deafmute subjects. Therefore, no reference is made in my paper to the usual scientific tests I have gone through with in the deafmute children under my care.

THE SURGICAL TREATMENT OF INFECTIONS OF THE PERITONEUM WITH ESPECIAL REFERENCE TO THE IMMEDIATE STERILIZATION OF THE SAME.*

By Joseph A. Crisler and Eugene J. Johnson,
Memphis, Tenn.

Barring emboli, pneumonia and a few other incidental or accidental interventions, we might say that peritonitis is the last barrier between the abdominal surgeon and a *no mortality* record. It is the crowning event and the last word in the warfare waged by bacteria and the superlative triumph of the enemy.

The most pregnant factors that operate as causative agents of acute general peritonitis probably are: appendicitis first, cholecystitis second, the salpingitides and other accompanying infections through the uterus third, traumatic injuries to the peritoneum and abdominal parietes fourth, and perforating ulcers of some of the hollow visci fifth.

This will cover 98 per cent of all the causative agents in the South. Acute suppurative and gangrenous appendices stand at the head of the list, although the ratio is being rapidly reduced by early diagnoses and early operation. The so-called Ochsner treatment instituted several years ago, while then most worthy, is now almost obsolete in most parts of the country and is responsible for the predominating number of cases of peritonitis attributable to appendicitis in the South. A large number of physicians, acting more upon the importunities of their patients perhaps, than upon their own judgment, or it may be acting upon both, are using the so-called Ochsner treatment for appendicitis and only resorting to surgery in such cases after prominent and well marked symptoms of peritonitis are well in evidence. A large number are combining the Murphy drip and Fowler position with the starvation and ice bag ideas of the Ochsner treatment, way on past the abscess walling period, until rupture of the abscess takes place and a general suppurative peritonitis results; also a great many violent, fulminating attacks of appendicitis do result in peritonitis before surgical aid can be given, even in the hands of the most skilled and careful physician, and are most frequently due to environment and inaccessibility to proper surgical measures. We think then that we are still safe in putting appendicitis at the head of the list as a causative factor.

Phlegmonous processes in the gall-bladder, an organ situated, as a certain prominent internist has said, in the region of doubt and uncertainty, is found by surgeons to cause peritonitis more frequently than has been ordinarily supposed. This, too, seems to be on the increase. We have seen quite a number of cases wherein the gall-bladder had ruptured and emptied its pus into the peritoneal cavity, having given but very little more symptomatology, outside of the blood picture, than would be expected in an ordinary case of duodenal or stomach ulcer.

In the face of all of our advanced knowledge upon the use of antiseptics and in the midst of our so-called aseptic era, our old enemy, puerperal septicemia and puerperal infections and our ever-present enemy, the Neisserian infection, continue to come up with their usual quota of fertility in the production of peritonitis.

The general run of our obstetricians do not use thoroughly boiled gloves, if gloves at all, in the handling of their cases, nor do they carry their sterilizer around in their buggies to the private homes, so as to avail themselves of sterile gowns, towels and instruments. This is partly due to the fact that the average physician is too busy to attend to these preliminaries, all-important as they are, and again to the fact that the public has not become sufficiently alive to this necessity, so as to demand it. Most of all, however, the cause lies in nature's wonderful defensive element in permitting the largest

*Read in the Section on Surgery at the sixth annual meeting of the Southern Medical Association, Jacksonville, Fla., Nov. 12-14, 1912.

number of all obstetrical cases to escape infection regardless of who the accoucheur is and what he does. In other words, if the obstetrician knew that ninety-nine out of every hundred of his cases were going to become infected unless he observed the most rigid and painstaking surgical cleanliness under all circumstances, instead of the very few out of every hundred which do become infected, while the large number escape under the most careless technique, then the millennium of high class accouchement would have come.

As for the Neisserian infection we can offer no hope of its abatement. It perhaps belongs to the realm of social economics and is only an adopted child of the medical profession, under protest. There will always be enough fallopian tubes that will rupture early to give us plenty of exercise in the study of peritonitis.

Under the fourth heading we are all aware of the effects of an unattended gunshot wound or other perforations wherein a hollow viscus is injured, but we do not think we attribute quite enough importance to other traumatic injuries, such as a violent blow or kick over the abdomen, especially the kick of a horse or mule, as a productive element of general peritotnitis. These cases should be investigated with the utmost care at the earliest possible moment and all of the elements of doubt should be transferred to the side of peritonitis, so that an early exploration into the abdomen can be made, for among all things surgical we do not know of anything more hidden, while masquerading under the mildest outward symptoms. Perforating ulcers permitting the outflow of the contents of the viscus into the peritoneum can frequently be anticipated, except perhaps in typhoid, and as our diagnotisc skill of ulcer of the stomach and duodenum particularly, becomes more acute, these factors will diminish. So far, however, we can safely say that many of these are situated in the above mentioned region of doubt and tragedy, while many acute perforations can occur with very few premonitory symptoms.

The signs and symptoms of peritonitis are as varied as its causes and intensities, with *pain* and *rigidity* at the head of the list, while the temperature ranges are very variable. It is useless to talk about the patient's facies and the frequent vomiting and the tender distended abdomen and the pulse rate and the blood tension; while all are important, none are pathognomonic. This brings us to say that the diagnosis must depend largely upon the history of the case.

We do not mean to underrate the importance of the varying blood picture, for the microscope is of as much importance here as in the study of a case of malaria, and the sphygmomanometer and other instruments of precision are very useful, but somehow our most active and otherwise most capable practitioners of medicine have not brought themselves to a study of these refinements in diagnosis. Whether they have been disappointed with the results or cannot spare sufficient time or do not care to trust their own findings, we do not pretend to say. We do know, however, that the largest number of cases of peritonitis that have ever fallen into our hands for surgical attention have never had a previous blood examination made. It is but fair to mention, however that the men who depend upon the bedside signs and symptoms for their diagnosis and seem to have no time and very little respect for the use of the microscope, have developed a keener mental acumen in reaching a conclusion, than those who must reach their diagnosis by set and fixed rules of mathematical accuracy. In other words, there seems to be a compensation somewhere along the line, wherein a merciful hand is extended to the man who uses what we might call the old-fashioned methods in reaching his conclusions.

Perhaps we might say that his "sixth sense" is more highly developed; yet it is a beautiful and a rare thing, to see a man in full possession of all of this and at the same time to conform it to and embrace with it, the aids given us through modern instruments of precision.

We have learned that it is only a short step between any of the infections mentioned above and peritonitis. We have learned, too, in a practical way, that the nature of the previous ailment and its intensity has much to do with the intensity of the peritoneal infection in the beginning. Many have learned the all-important lesson, that peritonitis is an unnecessary result, if these previous infections can be properly handled at the outset. The people have learned that the practitioner is at fault when he permits a case of peritonitis to develop, provided he has not been hampered by the whims of the patient or by environment. A sudden cessation of pain in the site of infection, next to changes in the blood picture, is most important. We do not have to wait for the thready pulse and anxious expression and the frequent emesis and the distended abdomen and the pain with its general rigidity. It is much better to make the diagnosis before this comes, even if in error, than to await all of the clinical symptoms, and be too late.

The treatment of peritonitis depends upon its cause and upon whether it is local or general. This is not all. The result of treatment is the most important and this depends almost entirely upon whose method you use. Murphy took a long step forward

when he instituted his saline drip, Fowler position and drainage, and the high mortality fell to a phenomenal degree, but still remains too high.

When we tell you of the treatment used first by our Dr. Eugene J. Johnson, and continually since by both of us, we expect to draw your severest fire of criticism. However, we are going to offer this as a mere preliminary report without details, as we expect to give a full and complete report including a complete study of a thousand cases at a future date.

More than six years ago Dr. Johnson began some experiments upon dogs as to the results of iodine put into and left within the peritoneal cavity. He found that large quantities did no harm. He also found that the end results of the experiments were satisfactory, in that the dogs lived in apparent good health, without discomfort and some weeks following when the peritoneum was again opened there were practically no adhesions. With this encouragement he tried the experiment in cases of suppurative peritonitis, following various infections in the person of negroes and it was discovered that if the patient was not already moribund that the mortality was reduced to nil.

He communicated this information to Dr. Crisler in a confidential way, as we had long been associated and the latter begun the use of the tincture of iodine in washing out and swabbing out all pus cavities within the abdomen and pelvis, being encouraged later on to adopt the flushing of the whole peritoneum by Dr. Johnson's successes in such cases where the general peritoneum was infected or quite likely to be infected.

We subsequently found that if the tincture was diluted with alcohol to one half that the results were still satisfactory in every instance. Dr. Johnson then left out the iodide of potassium in the official tincture and used 66 2-3 per cent of the iodine salt strength instead of the original 100 per cent strength to the given quantity of alcohol. We now dilute this half with pure alcohol, which means that we use really 33 1-3 per cent strength tincture of iodine without the iodide of potassium addition as compared to the regular official tincture. Our assistants have christened this mixture *"half and half,"* and for the want of a better name we will hereafter refer to it by this one. We have not carried this dilution with the alcohol any further down in using the agent in our work. Just how much further the dilution could be carried and still get perfect results from the iodine element or from the alcohol element, or from both, we do not know. We are, however, extending this experiment in all directions.

What we most wish to bring before you is the fact that first, we are using the above mentioned *"half and half"* in all cases of peritoneal infection; whether it be localized from an unruptured gangrenous appendix or other source or whether the peritoneum is wholly infected, it makes no difference. We simply put out the fire with this mixture and disregard infection thereafter. If we have a ruptured gall-bladder, for instance, as soon as this is discovered at the operation and before the incision is extended further, we literally pour a quart of this mixture into the abdomen and thoroughly sift it into all of the recesses. We do not fear the use of too much of the mixture; our only fear is that some pocket or interspace betweeen the coils of intesines or elsewhere might escape us. If the case is already one of acute, general fulminating peritionitis, we are even more liberal with the flushing out and washing out process with *"half and half"* mixture. If in our judgment a quart will do, that is all that is used, though we have sometimes used as much as a gallon. This applies equally to any other infection whether it be a ruptured appendix with its consequent peritonitis local or general or a gunshot wound or a ruptured bladder or a ruptured tube or any other infection from the pelvic organs or a perforated ulcer or what not.

The peritoneum is irrgiated proportionately to the extent of infection. It might interest you to know that we have used this treatment in over a thousand cases; that it has enabled us to feel perfectly easy and contented as to the outcome of any case of peritonitis or of peritoneal infection, provided the treatment can be used before the patient is actually dying from the disease. In other words, if the toxins from the infection have not already killed the patient or rendered death inevitable, we have no further fear of the outcome, because this treatment puts out the fire immediately.

I think when all of our statistics are accurately compiled we will show a mortality, even in diffuse peritonitis, of less than 2 per cent. We will also be able to show a comparatively painless convalescence. We will also show fewer adhesions than would follow after recovery from the peritonitis under ordinary methods. We will also show that there is no toxicity from the use of the treatment. We will also show that from within six to eighteen hours there is a drop of temperature from whatver it was to beneath a hundred degrees. We are enabled by this method to boldly and safely remove every appendix that is suppurating and has ruptured, even though in doing so we have to tear down the abscess wall. We are also enabled to remove with perfect confidence and safety any infected tube or evacuate any broad ligament or pelvic abscess or infection, regardless of the nature of the infection and of its duration. We are en-

abled to handle gunshot wounds of the intestines, in so far as the fear of subsequent infection is concerned, with all safety.

You will please pardon us for digressing, but this holds good in all infected joint effusions and infected pleural effusions. We have also applied it in a very few cases of local infections of the meninges.

As to the subsequent handling of the cases, we will say that if the infection has been very extensive in the peritoneum, for instance, we use the same methods of drainage and all other precautions, including the Fowler position and in desperate cases hypodermoclysis. We usually mop out all of the surplus fluids that are accessible to the incision after the mixture has been liberally poured into the abdomen. We are prepared to say, however, that as much as a pint of the mixture, and probably much more, can be left in with all safety and without any subsequent ill-effects, provided drainage is used. Just how much of this mixture or of alcohol or of the pure tincture of iodine could be poured into a normal peritoneum and be left there without evil effects we do not know, but we believe that very much could be used with safety.

In conclusion, we wish to apologize for this abrupt and scattering report, and while we invite your severest criticism, we feel perfectly easy over the outcome of the treatment, because we feel fully assured that if you will adopt this treatment carefully and fairly, that your judgment will ultimately be overwhelmingly in favor of it.

We feel honored to have had the pleasure of giving this report, even in a feeble and scattering way, first, to our Southern Medical Association.

DISCUSSION.

Dr. W. A. Bryan, Nashville, Tenn.—This report is an exceedingly interesting one to me. I have been using iodine sometimes in the abdomen recently instead of carbolic acid.

For instance, in dealing with the stump of the appendix, in dealing with abscesses that have occurred or for which we have directly operated.

Now, we know that iodine is toxic. We know that Dr. Crisler would not dare to give one of his patients a bit of that mixture to drink, because we would be sure that that patient would die of poison. On the other hand, we know that these patients that the doctor has treated did not die; therefore we assume that they did not absorb the poison.

It is interesting in the study of inflammatory processes generally—I am not talking about those cases like gunshot wounds, where you get to the patient immediately and can apply your iodine and kill the infection outright, but I am talking about those cases where an inflammatory process has gained a footing. What is an inflammation? We have been taught, and we have been thinking all the time until in recent years, that inflammation is a pathological process. Now, we do not look at inflammation as a pathological process at all, but as a healing process. Inflammation is the thing that nature does to limit the spread of the bacteria; it is the thing that nature does to kill the bacteria, to heal the damage or to cure the damage done by the infection.

In an infection in the peritoneal cavity the bacteria are buried in the tissues. Now, in peritonitis the bacteria do not lie on the surface. I am not criticising the doctor's statement; I am simply trying to get at the *modus operandi* of the treatment. The bacteria do not lie on the surface as they do in gunshot wounds, where some one has probably carried in a lot of bacteria. They lie not on the surface, but in the tissues. That inflammatory process develops; your bacteria are lying here (illustrating); how deep depends upon the extent of the inflammatory process or infection. That means simply that the iodine does not come in contact with the bacteria that are playing the mischief, but it kills these on the surface (illustrating on board). Now, what does it do? What does anything that has ever benefited an inflammatory process do? We used to use antiseptics, you know, on an inflammatory process. We found out that it did as well without antiseptics. An inflamed hand, for instance. We soaked another inflamed hand in hot water; the second one gets well just as readily as the first one. So that certain things are done in the treatment of inflammatory processes. We cannot get at the germs and kill them; neither can we kill those in this process that has taken place. In the inflammatory process the resistive powers of the body are interfered with, and the anti-bodies, though they may be high and abundant in the blood where all this exists, those anti-bodies are not as they should be. Now, if we can get rid of the poisons contained in here we will save the patient from so much absorption of the toxines. If we can bring in the serum a new circulation with abundant leucocytes that are capable of using the opsonic power in the blood on these bacteria, then we get something worth while.

What does the iodine do? Comes in contact with the surface. You would not dare give a patient a teaspoonful of tincture of iodine, yet we do not hesitate to pour a quart into the peritoneal cavity, and it makes the cavity weep.

I was glad to hear you say you drained in these cases, doctor. The fluids are poured out on this surface and new fluids are brought with high antibacterial powers into the peritoneum, and thereby you accomplish two things—get the poison directed away from the center of the fight and bring the curative properties here.

Iodine cures inflammatory processes the same as Bier's hyperemia does, and that is successful because he was the first man who understood the treatment of inflammation—to get rid of the poison—bring in the thing that nature provides to kill the bacteria and cure the patient.

Dr. J. Shelton Horsley, Richmond, Va.—This treatment of Dr. Crisler by extensive flushing of the peritoneum with iodine is entirely new to me, though, of course, we all use iodine in sepsis very freely. It certainly seems like heroic treatment, but, after all, results are the thing; and if Dr. Crisler can cure his patients with this treatment that could not otherwise be cured, then we should adopt this method. Personally, I recall one case mentioned by

Dr. Wyeth in which death followed the injection of a drachm of tincture of iodine into the sac of the hydrocele. This would make me a little cautious in using iodine so extensively in a serous cavity.

Dr. Jere L. Crook, Jackson, Tenn.—I feel that we are under obligations to Dr. Crisler for this startling report, which I was somewhat prepared for because I had known of Dr. Johnson's pioneer work along this line some months ago. The only tribunal before which we can judge of the results of any treatment is at the bar of mortuary statistics. With this point established, the doctor's treatment has certainly made good. Whether startling or not, it is extremely interesting to us, because it is new, not the use of iodine in infections, but the use of iodine in the delicate structures of the abdominal cavity, and from the fact of its newness it becomes startling.

I was glad to know that Dr. Johnson, preliminary to his use of iodine on the human subject, had demonstrated its harmlessness on the lower animals, because it would have required a high degree of bravery to have used it first in the human system without knowing what it would do. From the lower animals he seems by gradual gradations on the negro race to have worked up to the ordinary fellow-citizens. (Laughter.)

I shall look forward to the completion of the report, and I feel sure it will give me a great sense of pride from the fact that two of our own Southern men, so closely identified with Southern surgery and ideals, have been the pioneers in this wonderful work.

Now, we begin to ask ourselves, "How can these things be?" that are so different from the things of the past.

Dr. Bryan's theory was interesting to me, but I have another one: I do not believe the use of iodine in an infection could possibly be a prototype of Biers' theory, because we have already the highest inflammation we could possibly have—a temperature of 105—and there could not possibly be a greater infection locally; hence nature is already doing her very utmost there to prevent the death of the patient by the bringing forward of her white blood cells to ward off the army of invasion. You cannot increase in this case the number of white or red blood cells coming forward by the use of iodine What do you do, then? Simply kill out numbers of the invading germs there, and by killing out the enemy you give the victory to the white blood cells. That seems to be the way we can theorize on it in a case of septic peritonitis, but whenever he pours it into a fresh gunshot wound we have no protection from nature. She has not had time to marshal her forces, the septic contents are poured out over everything, and you have a condition absolutely normal, of the intestine and peritoneum, if you operate immediately. Now, I believe in that case the throwing out of the iodine gives nature a chance to bring forward her germs of defense to ward off the invading germs.

But, theorize as we may, the results speak for themselves, and I feel very much gratified that the doctor has brought forth this report; and it seems to me there is a note of hopefulness we have not had in the past, because we have not reached the point that we would like to reach, and many of us have not had the remarkably successful experience with Dr. Murphy's technique that Dr. Murphy has had, and so we welcome anything that will give anything like the results which the essayist has given us today.

Dr. Duncan Eve, Nashville, Tenn.—Mr. Chairman, I do not desire to add anything of a scientific nature to the subject, but when Dr. Crisler was speaking of the heroic treatment with iodine, and, further, Dr. Crook added that the experiments were made in regular gradation, it reminded me of the introduction of ethyl chloride some years ago, in which we thought we had at last a safe anesthetic.

We began by making some experiments ourselves, and, in fact, had an assistant to use the ethyl chloride—first upon dogs. It seemed to be very satisfactory. Then, later, upon the colored race, which seemed also very satisfactory; but I suggested we had better go a little further. So this experimenter of ours then used it next on an Irishman (laughter) and said it was all right; and we then proceeded with ethyl chloride indiscriminately and thought we had an ideal anesthetic—which we did when its use was for only a short time.

I desire to state that if nothing else had been presented to this section, I am fully repaid in hearing this interesting paper on the use of iodine, for my trip to Jacksonville. Dr. Crisler's experimentations in the use of this most excellent drug are of great value, and we learn something more unique and interesting about it—absolutely curative—each and every day.

Dr. E. Denegre Martin, New Orleans, La.—Dr. Crisler speaks of one thousand cases. How many of this number were cases of general peritonitis and what were the results? In local peritonitis we know that drainage will always give good results, but it is in cases of general peritonitis where Murphy's suggestions have been so valuable, and in which we have been able to save many of the cases which were formerly looked upon as hopeless, that we are most concerned; I would like to ask Dr. Crisler how many of these cases were among those of which he speaks and what were the results?

Dr. Bryan.—I just want to speak about the misunderstanding Dr. Crook had of my position. I was not giving theory. That is a demonstrated fact. Now, you can chop all you please with your axe, but if you don't hit the chicken you don't cut off his head. You can go out in the woods and shoot all you please, but if you don't hit the bird it flies on. Now, you are a thousandth of an inch to an inch and a half from the surface, and if you don't hit the germs you cannot kill them. We are discussing a fact.

Now, I stated another fact: We know that when these irritants are applied to the surface of the peritoneal cavity they produce a pouring out of fluid into the peritoneal cavity. I do not say that they loosen up the circulation in the inflammatory area, but everyone knows, in the midst of stasis, that not all the vessels are involved, and every inflammatory process that produces extensive stasis produces gangrene. If your fluids are poured out on to that surface, where do they come from? From the tissues underlying the surface. Now, if there are tens of millions in this inflammatory process, where are those fluids replaced from? From the circulation going on, because it is replaced. Where do those blood vessels get those fluids that the iodine causes

to weep out here? From the general circulation. Nature cures an inflammatory process by doing certain things, and Dr. Crisler is doing the same thing that Bier did. What did Bier do? Went into the field where he could get good soldiers and good medicine to pour on to the bacteria—namely, into the general circulation. Dr. Bier does it one way, Dr. Crisler another, but in the end the results are the same.

Dr. Crisler (closing).—Mr. President, I am very much obliged to the gentlemen for their very kind consideration of the subject. I am surprised at their mildness. I thought they were going to get really violent, but they are all as calm and genteel as is their habit in the ordinary walks of life.

I don't think any of us know just exactly what happens. I am inclined to think that the peritoneum is sterile when we get through with it, through and through. I don't know what absorption may take place, or what effect this absorbed stuff may have on the toxines and on the germs that are extant in the body—the lymphatics and even the blood in some cases. I do know that the condition becomes improved almost immediately. It seems to us that every hour we can see an improvement. We cut into the bellies frequently and find gangrenous appendices and yellow water, and you can drain and do everything else, except use iodine, and once in a while they will die.

As to the Murphy drip, of course my friend, Dr. Martin, knows that I am too wise a man to throw any rocks at Dr. Murphy about anything. I think he is one of the greatest teachers of the age and a great man; but if Dr. Martin has tried very diligently to make those people who are almost dying of peritonitis, either before or after operation, hold and absorb that water, he is doing more than I have been able to do. We quit that a while ago, because they are the kind who need the saline most and absorb less. Give them a hypodermoclysis. Now, just take this much home with you: If you are afraid of iodine, don't use it at all, to commence with, but if you have an idea that there may be some element of truth in it, do this: Take the next four cases or five cases that you have which you know, by all your previous treatment, they would die, and apply this treatment vigorously and liberally to them and to those that you know are going to die under ordinary circumstances, and see how few you lose, see how quickly the patient rallies, how quickly the pain disappears. If you operate this afternoon, in the morning the patient is better and smiling, flat abdomen, pulse fuller.

Question.—How do you drain?

Dr. Crisler.—By just common drainage tubes and Fowler position.

Now, I believe it does sterilize the peritoneal membranes through and through, turns it dark all the way through, cauterizes the lymphatics and prevents rapid absorption for several days, and you get fewer adhesions.

Don't try it on cases that you know are going to get well, but try it on some of the cases that you feel are going to die. It won't cost much, and you will be using it the next time we hear from you.

Of course, we have not had a thousand cases of suppurative peritonitis in our lives, and I trust we never will, but we use it in every case that is infected. But we always drain.

CORRESPONDENCE

REGARDING THE PREVALENCE OF GONORRHOEA IN THE NEGRO—AN INQUIRY.

Editor Southern Medical Journal.

The following extract from an article "The Negro and His Health Problems," by Dr. J. Madison Taylor, appearing in the Medical Record of September 21, 1912, has excited a degree of unfavorable criticism from different sources, which contend that the imputation is not fair to the Negro race: "An important observation made by several Southern physicians is to the effect that sexual lawlessness resulting in lynchings is to be explained thus: The male negro is nearly always infected with gonorrhea. He neglects treatment habitually. Chronic prostatic irritation ensues. Thus sexual impulses frequently become overmastering. Alcohol particularly inflames this state and likewise dethrones reason; hence the first female he meets he is tempted to assault. This is often a white female; thereupon the fury and vengeance of white men are excited, and disastrous results follow to the negro."

The idea of the comparative prevalence of gonorrhea in the race is a generally accepted statement among medical men of the north, but I have been unable to verify it by any statistics or other authoritative sources. May I ask you to bring the matter editorially before your subscribers, asking for contributions on the subject. An answer to the following questions may be of assistance in getting at the pith of the matter.

In your personal medical experience as compared with the white race:

1. Is gonorrheal urethritis more prevalent among the adult negro male population?
2. Are its sequela pyosalpynx, pelvic abscess, etc., more common among the adult female negro population?
3. Is the proportion of gonorrheal opthalmia greater among the negro newborn?
4. Is the disease more prevalent among the city or country negro population?
5. Is the disease as virulent in the colored race?
6. Is chronic gonorrhea and its sequela, gleet prostatitis and seminal vesiculitis more prevalent in the negro male?
7. Is this condition responsible for the sexual lawlessness mentioned in the previous quotation from the article of Dr. Taylor?

Realizing that you will appreciate that fairness and not prejudice is instrumental in instigating the above inquiry, I hope that you through your Journal will assist us in answering the question.

Very truly yours,

WM. A. STEEL, M.D.
330 N. Broad St., Philadelphia, Pa.

The above inquiry is worthy of respectful attention by Southern physicians, those of both town and rural practice. They should be answered from the records of personal observation, and without a tinge of bias. They are questions that should be answered. The columns of the Journal are open for a discussion of the subject.

The Southern Medical Journal

Incorporating the Gulf States Journal of Medicine and Surgery and Mobile Medical and Surgical Journal.

Published monthly at Nashville and Mobile. Price, $2.00 per year; 25 cents per single number.
Address Southern Medical Journal, Suite 905 Van Antwerp Bldg., Mobile, Ala., U. S. A.
Entered as Second Class Matter July 8, 1908, at the Postoffice, Nashville, Tenn.

EDITOR-IN-CHIEF.

SEALE HARRIS, M.D.....*Mobile, Ala.*

MANAGING EDITOR.

H. A. MOODY, M.D.....*Mobile, Ala.*

ASSOCIATE EDITORS.

J. A. WITHERSPOON, M.D.....*Nashville, Tenn.*
W. D. HAGGARD, M.D.....*Nashville, Tenn.*
W. A. BRYAN, M.D.....*Nashville, Tenn.*
W. M. LITTERER, M.D.....*Nashville, Tenn.*
M. M. CULLOM, M.D.....*Nashville, Tenn.*
OSCAR DOWLING, M.D.....*New Orleans, La.*

BUSINESS DEPARTMENT.

MR. C. P. LORANZ, *Business Manager*.....*Mobile, Ala.*

OFFICERS OF THE SOUTHERN MEDICAL ASSOCIATION.

PRESIDENT.

DR. FRANK A. JONES.....*Memphis, Tenn.*

FIRST VICE-PRESIDENT.

DR. STUART MCGUIRE.....*Richmond, Va.*

SECOND VICE-PRESIDENT.

DR. J. D. LOVE.....*Jacksonville, Fla.*

COUNCILLORS.

DR. H. H. MARTIN, *Chairman*.....*Savannah, Ga.*
DR. D. W. JONES.....*Brookhaven, Miss.*
DR. OSCAR DOWLING.....*Shreveport, La.*
DR. W. S. THAYER.....*Baltimore, Md.*
DR. JOSEPH GRAHAM.....*Durham, N. C.*
DR. JOSEPH Y. PORTER.....*Key West, Fla.*
DR. ROBERT WILSON, JR.....*Charleston, S. C.*
DR. J. SHELTON HORSLEY.....*Richmond, Va.*
DR. L. S. MCMURTRY.....*Louisville, Ky.*
DR. EDWARD E. CARY.....*Dallas, Tex.*
DR. J. N. BAKER.....*Montgomery, Ala.*
DR. J. A. CRISLER.....*Memphis, Tenn.*
DR. D. TRAVIS DRENNEN.....*Hot Springs, Ark.*
DR. A. R. SHANDS.....*Washington, D. C.*
DR. G. C. RODGERS.....*Alkins, W. Va.*

SECTION ON MEDICINE.

DR. GRAHAM E. HENSON, *Chmn*.....*Jacksonville, Fla.*
DR. V. H. BASSETT, *Vice-Chmn*.....*Savannah, Ga.*
DR. H. E. MITCHELL, *Sec*.....*Birmingham, Ala.*

SECTION ON SURGERY.

DR. W. A. BRYAN, *Chmn*.....*Nashville, Tenn.*
DR. P. C. PERRY, *Vice-Chmn*.....*Jacksonville, Fla.*
DR. ISIDORE COHN, *Sec*.....*New Orleans, La.*

SECTION ON OPHTHALMOLOGY.

DR. U. S. BIRD, *Chmn*.....*Tampa, Fla.*
DR. HOMER DUPUY, *Vice-Chmn*.....*New Orleans, La.*
DR. W. S. MANNING, *Sec*.....*Jacksonville, Fla.*

SECTION ON HYGIENE AND PREVENTIVE MEDICINE.

DR. J. Y. PORTER, *Chmn*.....*Key West, Fla.*
DR. C. E. TERRY, *Vice-Chmn*.....*Jacksonville, Fla.*
DR. A. W. FREEMAN, *Sec*.....*Richmond, Va.*

Next Meeting, Lexington, Ky., October or November, 1913

EDITORIAL DEPARTMENT

A PRESENT TO OUR SUBSCRIBERS.

This number of the JOURNAL begins the presentation to our subscribers of *forty per cent* more reading matter than was promised them when they subscribed.

By a change in the style of type used we are able to accomplish this and yet afford a page more legible and less trying to the eyes than was the preceding style, and it places the SOUTHERN MEDICAL JOURNAL in a class worthy of admiration by its readers and emulation by its contemporaries.

The increase in reading matter thus offered to our readers will, in one year, amount to nearly 400 pages, filled with the recorded opinions and observations of the brightest minds in modern medicine. All this is an unpromised present from the JOURNAL to its readers, freely given without money and without price. Though it adds materially to the cost of the JOURNAL, yet if it increases its usefulness to its readers, its entire object is accomplished. All the reward that would be accepted is the approving mention to doctors who do not know the JOURNAL. For such an acknowledgement the JOURNAL will be truly grateful. Its value would far exceed that of any printed advertisement.

LEXINGTON MEETING OF THE SOUTHERN MEDICAL ASSOCIATION.

The Councillors have selected November 18-19-20 as the date of the next meeting of the Southern Medical Association at Lexington. Those who heard Dr. Holloway's address at Jacksonville will recognize Lexington as the center of a region more lovely and fertile than artist's ideal or poet's dream; where they rear the blooded horses and the beautiful women, the noble men and the matchless Brew of Bourbon that are the

glories of civilization and the pride of Kentucky.

Lexington enjoys the distinction of being the first city, outside of those in the six states that originally comprised the Southern Medical Association, to secure the meeting place of our organization.

At the Jacksonville meeting invitations were received from Richmond, New Orleans, Savannah, Asheville and Nashville and the claims of these cities for the next meeting were most enthusiastically espoused by representative physicians. Richmond, Va., was the city that was expected to secure the meeting and was favored by most of the officers of the association who had worked and planned with that end in view, but Dr. Holloway, of Kentucky, attended the meeting for the first time. He liked the Southern Medical Association and decided to take it home with him, and by his eloquence, or some mysterious power akin to hypnotism that is yet not understood, particularly by those who favored Richmond, he simply captured the convention and Lexington was awarded the meeting.

Dr. Holloway talked Lexington for three days, without eating or sleeping, until he had some believing that Lexington was the only Southern city on the map. He proved by a big "war" map that Lexington is the nearest point to every city and town in the South and that all the railroads in the South lead to that city. His final stroke of diplomacy was the announcement that Lexington has the largest dairy in the world. This captured the "white ribboners" in the association and Lexington won by one vote.

Dr. Holloway's remarkable coup in capturing the next meeting of the Southern Medical Association for his home city, Lexington, Ky., is only equalled by Bryan's "Cross of Gold" speech at Chicago and his manipulation of the Baltimore convention.

There were many who were disappointed that Richmond was not selected, but everyone accepted gracefully the selection of Lexington The writer was one of those who favored Richmond, but he now believes that it is to the association's interest to meet at Lexington. The position of that city will tend to greatly increase the attendance of the class of physicians who, though Southern men, have not realized the usefulness to them and to the South of a strictly Southern medical organization. When they become acquainted with us and the great work that is being accomplished by the Southern Medical Association, we are sure that many of them will become active and useful members.

No positive program has been decided upon for the meeting, but it is safe to promise that it will be one of the most profitable and pleasant medical meetings ever held in the South. The various section officers are now busily engaged in preparing their programs and they give assurances that in a short time their programs will be completed and that they will be at least up to the high standard of those at previous meetings.

Since the Jacksonville meeting Dr. Holloway has removed from Lexington to Memphis, where he will engage in the specialty of genito-urinary surgery. He will be associated with Dr. Frank Jones, President, and Dr. J. A. Crisler, Councillor for Tennessee, of the Southern Medical Association. The medical profession of Memphis is fortunate in having a man of such ability and attainments to locate in that city. Though Dr. Holloway has removed from Lexington to Memphis, his love for his former city will keep him in close touch with affairs there and he will surely be on hand at the November meeting. It is worth the trip to Lexington to look him in the face and shake his cordial hand.

The Lexington physicians are already at work preparing for the meeting, the Fayette County Medical Society having appointed as a committee for preliminary preparation Dr. Charles C. Garr, Dr. Charles A. Vance and Dr. F. H. Clarke. The Lexington Commercial Club is also lending its co-operation and it is

safe to say that the physicians who are so fortunate as to attend the Lexington meeting of the Southern Medical Association may expect to enjoy the genuine Kentucky hospitality that is always a happy memory with those who have visited the bluegrass country.

SPECIAL TRAINS TO THE MINNEAPOLIS MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

The meeting of the American Medical Association at Minneapolis next June will attract many doctors from the South, most of whom will be members of the Southern Medical Association. In view of this fact a plan is on foot to charter a train or trains to be known as the "Southern Medical Association Special," composed of Pullmans, and which will afford comfortable transportation and quarters during the whole trip.

The attendance at the "Twin Cities" will be immense. The locality is remarkably attractive and interesting and would in itself pay one for the expense and trouble of a visit, even without the added attraction of the great association. Another thing that will increase the inclination of Southern doctors to attend the meeting is the fact that the President of the American Medical Association is a Southern physician, Dr. John A. Witherspoon, an active and valued member of the Southern Medical Association, and on the editorial staff of its official organ.

The Secretary would be glad to have the names of Southern physicians who contemplate going to Minneapolis and would appreciate any suggestions relating to the proposed excursion. As it is only four months before the meeting, such communications should be sent in without delay.

HOW TO REWARD COL. GORGAS.

"One of the few immortal names
That are not born to die."

In every land, in every generation men appear who in some conspicuous particular are so superior to their fellows that they compel admiration which ultimately merges into adulation. Their contemporaries look upon them as great men whose names will forever be household words. Seldom is this exalted estimate justified by the results. Generally the favorite preacher, poet, politician is only remembered kindly twenty years after he has won his fame; after fifty years he is a dim memory, and after a century he is forgotten. A few of his descendants may be so proud of him as to embalm him in the middle names of their children, or a postoffice still retaining its original title, caught from him.

The world reveres the memory of few physicians like Hippocrates, preachers like Paul, architects and engineers like Archimedes, conquerors like Caesar or patriots like Washington. Yet the line of immortals did not cease with these. From age to age humanity presents us with figures worthy to rank with the best. And among the best and greatest none are more worthy of national gratitude and admiration than are the three great men who have opened up to mankind that route to the East Indies so long sought by ancient navigators like Hudson and Columbus. John T. Morgan, the resolute, invincible Senator from Alabama, whose deathless determination resulted in the order to create the great canal; William C. Gorgas, whose knowledge, skill and determination rendered possible the task that had baffled de Lesseps with the wealth of the French nation to support him; and Goethals, the mighty, with all the resources of nature, art and brute force at his command. These three gigantic figures have cast a brilliant beam of unsullied glory across this era that all the clouds of time will not obscure.

The story of how Gorgas rendered it possible for Goethals to open the route to the Far East that Morgan had pointed out, how he transformed a death trap into an Eden, has already been told in every civilized language. The sons of no nation ever deserved its praise, gratitude and rewards more than do these

three citizens of the United States of America. They have quadrupled her military and naval availability and have laid a road for her commerce that will increase her wealth beyond computation. Better than that, they have added to those already prevailing another reason why war should be no more.

What, then, shall we, the people of the United States, do to show our appreciation of the epoch-making character of the mighty feat born of Morgan, built by Goethals, but rendered possible only by the science and ability of Gorgas? How may we most honor ourselves in honoring them? Morgan, alas, is gone before. Oh, that he could have lived to see his dream realized! But so surely as the oceans will meet and mingle in the locks of the canal, so surely will we rear to his memory a monument of bronze worthy of his pure and resolute character and the great work he accomplished. Goethals is to be made Governor of the Canal Zone, where he can perfect and protect the work of his hand; but for Gorgas, without whom the genius of Morgan and the skill of Goethals would have counted as naught; for Gorgas, whose wise and skillful management has saved more human lives than any living American general ever destroyed and saved to the Government more money than could be readily estimated; for Gorgas what can we do? Is there any office within the gift of President or Congress worthy to be counted as an honor and a reward for such a man and such services? No, there is not. But there should be one, and we must create it for him. In the Cabinet of our President there should be a Secretary of Public Health and Sanitation, presiding over a department whose services are needed in every state and territory, whose duty it should be to banish preventible disease from every part of the country, and thus to render habitable many a broad and rich scope of land now unavailable because of malaria. Truly it is a big job, but it is just his size. The country and the people are ready for it, and behold the man! None is, none can be more worthy than Gorgas.

Were poetical justice embodied in a medallion of bronze, it would show Morgan on the shore of the Caribbean, with one hand resting on the dividing ridge, while his face and his pointing finger were toward the Pacific. Below, and on the right, stands Gorgas, a mighty net in his hands with which he holds back and out of the way of Goethals the demons of disease and death, as the great engineer advances to attack the ridge, with Jovian thunderbolts in his upraised hands. Below and behind them the Caribbean is thronged with ships racing for the road to the Far East.

THE MISSISSIPPI STATE BOARD OF HEALTH.

Among the many State Boards of Health now doing excellent work, the Mississippi Board, whose report for 1912 has been received, is worthy of special praise.

Dr. W. S. Leathers, who is Director of Public Health, has demonstrated his possession of splendid qualifications for the position. It requires great executive ability, a genius for broad organization, a *suaviter in modo* that is proof against aggravation and difficulty and a sublime faith in oneself and the cause. That Dr. Leathers possesses all these is evident in the results he has accomplished.

He organized the Department of Health under the sub-heads of Administrative, Vital Statistics, Laboratory, Municipal Sanitation, General and Rural Sanitation and Publicity and Education. All these essential features have been administered with energy, judgment and success. The policy has been "to give publicity to insanitary conditions and practices and leave to the local health authorities, at least for a time, the initiation of remedial measures." The finances have been ably and economically used. In the Bureau of Vital Statistics the entire time of two clerks and three stenographers is devoted to the work.

The result has been that this part of the public health work has been done in Mississippi, during 1912, in a manner of which any state might be proud. The work of the entire department would be more perfectly accomplished were it possible to get more efficient service from the county and municipal health officers. This condition is common to many states and can only be remedied by paying such officers salaries adequate to the work required of them. In rural sanitation, particularly in the fight against hookworm, the work has been remarkably successful. Dr. Wickliffe Rose, the administrative secretary of the Rockefeller Sanitary Commission, says, in a letter dated December 27, 1912, "As I look back upon the work done in Mississippi I do not see how we could have improved it at any point." This is high praise from an expert judge.

Equally favorable comment is due in all other respects to Dr. Leathers and the Mississippi Board of Health.

THE PHARMACO-THERAPEUTIC IDEAL.

The chemical combinations produced by Ehrlic, guided by physiologic experimentation, have caused to dawn upon scientific imagination the vision of a chemical substance that would inhibit or destroy one, and only one, specific bacterium, but which in that respect should be prompt and certain. At least it must be innocuous to the body tissues in any and all doses, and not only *bacteriotropic* but *monotropic*, or affecting only the one bacillus it is desirable to destroy. This lack of effect upon concurrent bacteria is very desirable on account of the theory that not only are there non-pathogenic bacteria in the body, but also that certain species may be essential to our general well-being, just as the nitrogen-secreting organisms on the roots of legumes are necessary to their proper growth. Hence it follows that the *monotropic* chemical remedy for each separate disease that is caused by a *monopathogenic* bacterium is the *summum bonum* of chemico-therapeutics, constituting the ideal which modern medicine has created as its therapeutic goal.

Thus far no monotropic antiseptic or germicide has come from the chemical laboratory. At first it was hoped that "606" might prove to be such, but it is now known that this drug is destructive to other organisms, some of which are normal tissues of the body. The fact that the spirochaete is of animal, and not, like the bacilli, of vegetable nature, does not in the least change the principle of the desired monotropism, as a moment's thought will show. Though, as stated, this ideal has not yet been attained, still certain investigators seem to intimate that they have found such a remedy for the bacillus of pneumonia.

In the Lancet (London) of December 14, 1912, Sir Almroth E. Wright publishes an incompleted article giving details of experiments with a chemical substance called aethylhydrocuprein hydrochlorate, in proper dilution, in which its comparative effect upon the bacilli of paratyphosus, the staphylococcus and the pneumococcus were carefully studied. The resulting tables showed that the staphylococcus was almost, and the paratyphosus entirely, indifferent to its action, while the pneumococcus was entirely destroyed. Clinical experiments and reports from the use of this new cuprein compound will be waited for with much interest. Meanwhile it looks as though a long step has been taken towards finding the monotropic ideal; for it is stated that the medicine can be used with impunity either by mouth or subcutaneously. Patience! We shall see what we shall see.

A RANK INSTANCE OF BRAZEN IMPUDENCE BY A FEE-SPLITTER.

Below we publish one of the most barefaced, audacious efforts to seduce unwary physicians into acts that would ruin them

when discovered and tinge the whole of their future lives with regret and shame.

The man calling himself "Dr. H. A. McLaughlin," sends out broadcast the multigraphed letter we present below, that of our esteemed and indignant friend, Dr. Scott. More than one copy has found its way to this office.

Curve, Tenn., R. F. D. No. 1, Jan. 26, 1913.
Seale Harris, M.D., Editor-in-Chief,
Southern Medical Building,
Mobile, Ala.

Dear Doctor:

I herewith hand you letter from W. A. McLaughlin, M.D. This is my first approach by any "Fee-Splitter," probably on account of my rural location.

I hope that the *Southern Medical Journal*, with its competent corps, will grow in its magnificent fight against this most deplorable evil.

Yours truly,
GLENN T. SCOTT.

Memphis, Tenn., Jan. 18, 1913.

Dear Doctor:

Pardon me for the liberty I am taking in addressing you, but I wish to attract your attention to a matter that I am sure will be of vital interest to both of us.

I am specializing in the treatment of "Skin Diseases," such as cancers, tumors, wens, cysts, keloids, enlarged glands, goiters, eczema, lupus or tubercular conditions, etc., and am well equipped with all the latest improvements and methods of treatment known to medical science, such as X-ray, vibrators, leucodescent lamp, therapeutic lights and all the latest medical treatments, etc., and am connected with a private hospital or sanitarium, where I have one of the best surgeons in Memphis to do the surgical work, and I am sure our patients do, and shall, receive all the comforts of modern conveniences and surroundings possible.

I was associated in the early part of my professional life with one of the most prominent physicians in the country, who had taken instruction in Berlin, and other noted cities, and I am sure I am as qualified to follow the said chosen line of work as any one in the city, from the standpoint of producing results.

Now, Doctor, if you have any patients afflicted in my line of work, and are not in a position to properly care for them on account of hospital inconveniences; or the fact that you cannot afford to equip yourself with all the modern methods used, for the limited number of cases that may come under your care, I am submitting a proposition, that you send or bring these cases to me, and if we arrange to treat them, *I will divide the professional fee with you*, less hospital expense, medicine charges, etc.

I believe you will agree with me that I will be able to give the cases better attention, and can no doubt get larger fees for your part of the work than you could possibly get at your office, and I assume all the risk and responsibility, and relieve you of all cares connected with such cases.

I am operating strictly in an ethical way, and I assure you one trip to my office will convince you I am prepared to produce the best possible results.

Thanking you in advance for any favors shown me, and that I may be able to meet you personally, I beg to remain, yours fraternally,

H. A. MCLAUGHLIN, M.D.

It is difficult to express, in moderate langauge, sufficiently energetic condemnation of this effort to undermine the integrity of unsuspecting physicians. The printed form of the circular letter indicates the extent of this effort. Only when a large number of individuals is addressed is it customary to resort to it.

What doctor can afford to have his patrons know that he recommends to them, as a specialist, a man who "divides the professional fee" with him? And such things generally do come to light. There is another side to the arrangement proposed by the McLaughlin man. He is unknown to either of the editors of this JOURNAL, and therefore we cannot be sure that he would add the crime of blackmail to that of fee-splitting, but one is as bad as the other, and if once an unwary doctor were to act upon the above offer and send McLaughlin one patient and accept a part of the fee, he would be forever afterwards at the mercy of the grafter. He would possibly have to supply a succession of patients to feed the fee-splitter's greed, whether he needed assistance or not, and his master would indeed be moderate if he did not demand money as the price of his silence. Every doctor should, in self-defense and in loyalty to his profession, do as Dr. Scott has done in exposing such unethical propositions, and, in addition to that, he should submit them to his county society for discussion and action. The lay press should also be informed of the presence of such a "grafter" in a community. Under such treatment these unethical enterprises would soon become unprofitable. In the broad glare of publicity they would wither like the gourd of the prophet at Nineveh.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

The ninth meeting of this important association is to be held in Washington, D. C., on May 6 and 7, 1913. The officers are as follows:

President, William C. Gorgas, M.D., Ancon, Canal Zone. The following gentlemen, each of whom is President of the Association following his name, act as Vice-Presidents, ex-officio:

Dr. George A. Leland, Boston, Am. Laringological Association.

Dr. Charles A. Powers, Denver, Am. Surgical Association.

Dr. Charles L. Minor, Asheville, Am. Climatological Association.

Dr. Lewellys F. Barker, Baltimore, Association of American Physicians.

Dr. Edward L. Keyes, Jr., New York City, Am. Association of Genito-Urinary Diseases.

Dr. Aurelius R. Shands, Washington, D. C., Am. Orthopedic Association.

Dr. John L. Morse, Boston, Am. Pediatric Society.

Dr. Herbert U. Williams, Buffalo, Am. Association Pathologists and Bacteriologists.

Dr. Miles Standish, Boston, Am. Opthalmological Society.

Dr. James F. McKernon, New York City, Am. Gynecological Society.

Dr. Henry C. Coe, New Orleans, Am. Dermatological Association.

Dr. Edward R. Stitt, Washington, D. C., Am. Society of Tropical Medicine.

The Secretary is *Dr. Walter R. Steiner, No. 4 Trinity St., Hartford, Conn.*

The meetings of the Congress will be held in the Assembly Room of the New Willard Hotel, beginning Tuesday, May 6th. The subject to be considered is: "On the Study of Renal Function." Papers will be read by Prof. Carl Schlayer, of Munich, Germany, and Dr. Leonard G. Rountree, of Baltimore. The discussion will be led by Drs. Hugh Cabot, of Boston, Henry M. Christian, of the same city, George Dock, of St. Louis, John T. Geraghty, of Baltimore, Theodore C. Janeway, of New York, and William S. Thayer, of Baltimore. At eight o'clock p.m., President Gorgas will address the Congress on the subject of "Sanitation at Panama as it Relates to Sanitation in the Tropics Generally."

The "Development of Tissues in Vitro," or outside the organism, will be considered Wednesday afternoon and evening. Papers will be read by Doctors Ross G. Harrison, of Yale, Montrose T. Burrows, of Cornell, and Robert A. Lambert, of Columbia. The discussions will be led by Dr. Leo Loeb, of St. Louis, and Dr. Warren H. Lewis, of Baltimore, and continued by other eminent scientists. The announced participants on this occasion constitute the elite of American Medicine. Their papers and deliberations should shed new light upon some of the questions in physiology and pathology that are but too little understood at present. Persons desiring further information on the subject should address the Secretary, who will promptly reply.

THE GERM OF YELLOW FEVER.

Dr. Harold Seidelin, of Liverpool, went to Merida, Mexico, to study the epidemic of yellow fever that prevailed there in 1911. He contracted the disease but fortunately in a mild form, and recovered. He found, in every case he examined, including his own, a parasite discovered by him several years ago, and which he named *paraplasma flavigenum*. He has made a report of his findings, illustrated by colored plates, and published in "Yellow Fever Bureau Bulletin, Vol. II, No. 2, 1912." Though many observers have, in past years, claimed to discover some parasite that was the specific cause of yellow fever, thus far their conclusions have not been substantiated by the studies of others. It is very possible, however, that the form discovered by Dr. Seidelin, armed as he was with the knowledge previously accumulated by a host of brave fellow students, may prove in very truth to be the long sought etiological cause of the dread disease.

SOUTHERN MEDICAL NEWS

ALABAMA

The fine new hospital at Bessemer is now receiving patients.

In Florence, Lauderdale County, the privilege tax on practitioners of law, medicine and dentistry was increased from $18.00 to $25.00 in spite of vigorous protests by the victims. The profession of divinity was fortunately exempted.

Dr. S. B. Ham and E. B. Bailey, of Demopolis, have opened an infirmary at the residence of the late Dr. E. C. Goodloe. It is up-to-date in every particular.

Dr. R. F. Lovelady and E. P. Hogan have been elected president and secretary respectively of the Board of Control of Hillman Hospital at Birmingham.

The Bullock County Medical Society held its first meeting in 1913 at Union Springs in the office of Dr. James L. Bowman, on Wednesday morning, January 1. This society expressed emphatic approval of the effort to secure adequate records of vital statistics for Alabama, and pledged its assistance in placing Bullock County within the "registration area." It also endorsed the medical and dental examination of all school children and recommended "that they be carried out so far as practical in all the schools of Bullock County."

The Bullock County Medical Society claims to be the "first on record to take a stand in active support of medical and dental examinations of public school children in the United States."

The officers are: J. R. Oswalt, president; R. H. Hays, vice-president; H. M. Dismukes, secretary; T. J. Dean, treasurer. Though it is not one of the largest, it is one of the most earnest and efficient medical societies in Alabama.

NORTH CAROLINA.

Dr. A. W. Calloway and G. S. Tennent were elected president and secretary, respectively, of the Buncombe County Medical Society, Asheville, December 17, 1912.

Dr. Ralph W. Seem, of Wilmington, N. C., has been appointed assistant superintendent of the general dispensary of Johns Hopkins University at Baltimore.

SOUTH CAROLINA.

Dr. Oscar la Borde, of Columbia, was married to Miss Ellen Brooks Dunovant, of Edgefield, December 3, 1912.

FLORIDA.

The courts have upheld the privilege tax or license of $10.00 assessed by Pensacola on all its practicing physicians.

MARYLAND.

Quite recently a branch of the Society of Prevention and Relief of Tuberculosis was organized at Baltimore, in the capitol, by Dr. Lewellys S. Barker, Dr. William S. Thayer and Dr. C. Hampson Jones. They were entertained at dinner by the governor of the state.

TENNESSEE.

The Memphis Hospital Medical College and the University of Tennessee Medical Department have been consolidated under the latter title. This consummates the desirable condition of one medical school for white students, and one only, in the city.

The following elections for the ensuing year are reported: Crockett County, Alamo, president, Dr. J. H. Harris, of Bells; Secretary-treasurer, Dr. E. S. Hopper, Alamo.

Giles County, Pulaski, president, Dr. R. E. Aymett, Pisgah; secretary, Dr. J. A. LaRue, Pulaski.

Madison County, Jackson, president, Dr. J. A. Crook; secretary-treasurer, Dr. J. W. MacClaren.

Rutherford County, Murfreesboro, president, Dr. B. N. White; secretary-treasurer, Dr. Rufus Pitts, both of Murfreesboro.

Shelby County, Memphis, president, Dr. William Krauss; secretary-treasurer, Dr. J. T. Cullings.

On the 6th of December the Chattanooga Academy of Medicine, elected as president, Dr. H. P. Larimore; secretary-treasurer, Dr. C. R. Wylie.

December 18 the Knoxville Gynecological and Surgical Society was organized with ten charter members. At another meeting, January 2, the following officers were elected: President, Dr. B. B. Tates; secretary-treasurer, Dr. P. Herbert Acuff.

A new sanitarium known as the Watauga Sanitarium has been established to be operated by a company of the same name. The physicians constituting its medical staff are as follows: Dr. John A. Witherspoon, chief consulting physician; Dr. G. C. Savage, consulting physician for the eye, ear, nose and throat; Dr. W. A. Bryan, surgeon in chief; Dr. William Litterer, pathologist in chief; Dr. O. N. Bryan, visiting physician; Dr. C. A. Robertson, medical director; Mr. James A. Yowell, secretary-treasurer.

The sanitarium is situated near Nashville and its environment and equipment are ideal.

VIRGINIA.

The following societies elected officers: Lynchburg, president, Dr. George P. Hamner; secretary-treasurer, Dr. J. W. Walters.

For the Richmond Academy of Medicine and Surgery: President, Dr. J. Shelton Horsley; secretary-

treasurer, Dr. M. W. Peyser.

Shenandoah County Medical Society, Woodstock: President, Dr. S. J. Hoffman, Woodstock; secretary, Dr. W. F. Driver, New Market. A long step towards elevating the standards of medical teaching has been taken by consolidating two fine medical schools in Richmond into one, thus doing away with unnecessary and harmful competition. As the medical college of Virginia is served by the choicest talent of both the former colleges, the new School of Medicine will at once take rank with the best in the land.

WASHINGTON, D. C.

The Congress of American Physicians and Surgeons, to be held in Washington, D. C., May 6 and 7, 1913, is sending out a "Preliminary Program" indicating the subjects to be considered, and by whom Some of the leading themes are: "On the Study of the Renal Function," by Prof. Carl Schlayer, Munich, and Dr. Leonard G. Rowntree, Baltimore; "Sanitation at Panama as it Relates to Sanitation in the Topics Generally," by William C. Gorgas, M. D.; "On the Development of Tissue in Vitro," Dr. Ross G. Harrison, Yale University, Dr. Montrose, T. Burrows, Connell; Dr. Robert A. Lambert, Columbia; Dr. Leo. Loeb, St. Louis, and Dr. Warren H. Lewis, of Baltimore. Thirteen American Scientific Associations and Societies are represented on the committees of the Congress. Dr. William C. Gorgas, of Ancon, Canal Zone, is president.

A fine opportunity for study and travel combined is now offered by a proposed tour to be known as a "Physicians Travel and Study Tour," leaving New York in July and visiting most of the important capitals and health resorts in Europe.

The plan is endorsed by such men as Jacobi, Janeway, Kerley, Kiliani, and others, and merits consideration. For further information address Richard Kovaco, M.D., 236 East 69th Street, New York City.

Attention is called to our advertisement of the Medico-Chirurgical College, of Philadelphiai. Its hospital, laboratories and clinical amphitheater are above criticism and supplied with material for every possible demand. The character of instruction is intensely practical.

THERAPEUTICS.

MANGANESE.

Manganese, in minute quantities, is a normal constituent of the blood. On this account it is generally included in the list of haematics, but the testimony in its favor is not conclusive. It is sometimes included in prescriptions intended as blood restoratives, and one of the most widely advertised nostrums of this character bases a claim upon our support on account of the manganese it is said to contain.

One of the most rational combinations of this kind, and one which has been widely used with beneficial results is the simple formula devised by Prof. Mohr. It is as follows:

℞ Syrupi Ferri Iodidi.
Syrupi Mangani Iodidi .....aa f. ℥I
Syrupi Simplicis .....f. ℥II
Aquae Flores Auranti .....f. ℥IV

Misce. Signa. Dose, two teaspoonfuls after each meal.

Manganese is also used in menstrual derangements. For this condition the dioxide, in doses of from two to five grains (0.12-0.32 gm.) in capsules, three times a day is the least irritating form. Also the Syrupus Ferri et Mangani Ioddum, properly diluted as in the formula given, has been effectual. Potassium permanganate has been frequently used for amenorrhoea with great alleged benefit. It is so very irritating, however, that many patients refuse to take a second dose. In this form it is soluble in 15 parts of water, forming a clear liquid of a beautiful purple color. As an irrigation for the cure of recent gonorrhoea in the strength of 16 grains to the pint of warm water it has been highly praised.

Its unstable character renders it liable to violent explosion when added to substances like syrup or glycerine, and when administered internally it should always be combined with kaolin, in a pill, to avoid a similar danger in the stomach. This subject was treated of under the heading of "Emmenagogues."

Arsenic, which is believed by some to have a direct effect upon the elements of the blood, has been heretofore considered.

TONICS.

Tonics are of two principal kinds, mineral and vegetable.

Among the mineral tonics phosphorus is considered one of the most important. It enters directly into the composition of the brain and nervous system, and its compounds with earthy salts constitute the framework of many anatomical structures. A scarcity of phosphorus in the system, or of its necessary compounds, is shown by well-known symptoms, and cured by correcting the deficiency.

Pure phosphorus resembles colorless, translucent wax. As it grows old it assumes first a yellowish, then a red, then brown and finally almost black color, but does not lose its characteristics.

Exposed to the air it emits luminous fumes, and,

if the exposure be prolonged it takes fire spontaneously. It is slightly soluble in alcohol, more so in ether and the oils, and very in chloroform and bisulphide of carbon, in the latter of which if exposed to the air it is liable to spontaneous combustion of a violent nature.

The fumes of phosphorus are readily absorbed causing, when long continued, as in match factories, chronic phosphorus poisoning.

There is but one official preparation of phosphorus, "Pills of Phosphorus." Each contains 1-100 of a grain (0.0006 Gm.).

The danger of the various degenerative effects of even small doses of phosphorus if continued for any length of time has militated against its general use, so that in this shape it is seldom prescribed.

It is undoubtedly a powerful nerve tonic and stimulant, especially in the sexual debility of age or from excess. It is recommended for Hodgkin's disease, but even its advocates speak but uncertainly of its efficiency. It has also been used with advantage in locomotor ataxia, softening of the brain and osteomalacia. The continued use of phosphorus though at first stimulating to digestion ultimately impairs that function, and tends to induce fatty degeneration of the liver and kidneys.

Calcium, sodium and potassium afford hypophosphates of great usefulness as general tonics and feeders of tissue. Their doses are five grains as the minimum and from ten to thirty for the maximum (0.32-0.6-80 Gm.). The syrupus hypophosphitum compositus, compound syprup of the hypophosphites is an acceptable compound of the tissue building salts of phosphorus without its irritating and poisonous properties. It is a complicated mixture and contains 1-4 to 1 per cent of hypophosphite of iron. The dose is from a teaspoonful to a tablespoonful (30.0-120.0 cc.), taken after meals. It is far superior to the much advertised Syrup of Hypophosphites whose proprietor has made millions by profuse advertising. This preparation is very suitable for use in pulmonary tuberculosis, given in conjunction with cod liver oil.

The treatment of acute phosphorus poisoning is generally called for only by children who have gnawed the heads of friction matches. In such cases the symptoms manifest themselves in from fifteen to forty minutes. Nausea, vomiting, fluttering pulse, abdominal pain, loose bowels and dejecta which shine in the dark and smell of the drug.

In many cases these symptoms gradually abate in severity, and for a period of a few hours, or even for a day or two, the patient is in comparative comfort. Then the vomiting, abdominal pain, and prostration return, jaundice appears, albumen abounds in the urine, and vertigo, headache and restlessness set in. Sometimes in adults there is erotic mania, at others a tendency to stupor. In fatal cases death generally ensues within three or four days, though in some instances it has been delayed for weeks. Treatment is to wash out the stomach with water containing ten per cent of lime water, if immediately available, otherwise with pure water. An emetic of five grains of sulphate of copper may first be given if it will save time. It is also supposed to be a chemical antidote. After cleansing the stomach a dose of sulphate of magnesia should be given to remove any of the poison that may have passed the pylorus.

Old oil of turpentine, sticky and yellow with age, is also a chemical antidote for phosphorus, but is seldom available. It should be give in twenty drop doses (1.29 cc.) combined with mucilage.

COD LIVER OIL.

Oleum morrhuae, cod liver oil, has long been used as a restorative and tonic. Its virtues reside in its digestibility, this oil being more readily assimilable than any other fat. It is very doubtful whether any of its elements except the fat are at all valuable in this combination. Its peculiar taste renders it obnoxious to most patients at first, but many of them, and most children, become so accustomed to it that the unpleasantness is forgotten.

Cod liver oil is generally given in emulsion, one such preparation being official, Emulsio Olei Morrhuae. It contains fifty per cent of the oil, and may be flavored with lemon or orange peel syrup.

The emulsion Olei Morrhuae cum Hypophosphitibus, cod liver oil with hypophosphites, is similar to the other emulsion, but contains hypophosphites of lime, soda and potash also.

The average dose of either is two fluidrachms (8.0 cc.).

Locally, cod liver oil is sometimes used to soften crusts on the skin, and to relieve scaly eruptions.

It is also rubbed into the skin for tonic and restorative purposes, when it is needed, and for any reason cannot be taken into the stomach.

Half an ounce, or four teaspoonfuls (16.0 cc.) can be absorbed by the skin in ten minutes, with brisk rubbing.

Cod liver oil is not a drug, properly so-called, but a most readily assimilable food. Hence any disease that causes loss of fatty tissue is partly met by feeding the hungry tissues with this oil.

Thus in pulmonary tuberculosis it has for half a century been considered the one dose which must be prescribed whatever else might be omitted. When a chronic cough is caused by bronchitis instead of by tuberculosis no remedy is more certain or rapid to cause recovery.

In neurasthenia its nutrive properties are often

useful in increasing the patient's power of resistance. The emulsion with hypophosphites is most suitable for such cases, as also for atheromatous diseases of the arteries. In most wasting diseases of children, especially in rickets, and in all strumous conditions cod liver oil is more useful than drugs. Indeed in strumous diseases of the skin it was called by physicians of the preceding generation "the sheet anchor." For chronic rheumatism the oil is used externally and internally.

Its reputation for curing this condition is centuries old, but not as confidently relied upon at present as in the past. The emulsion with hypophosphites internally will be found useful, and externally the following:

℞ Olei Morrhuae.....III.℥ (89.0 cc.)
Olei Gaultheriae ..... I.℥ 30.0 cc.)

Misce. Signa: Liniment. To be rubbed into the affected joints night and morning.

Contraindications are, high fever, habitual, indigestion, diarrhoea, and where a fair trial results in flatulence and eructations flavored with the oil.

BOOK REVIEWS

E. MERCK'S ANNUAL REPORT.

It is refreshing to find, now and then, an example of absolutely reliable and disinterested comment concerning matters in which the reporter might be excused for omitting mention of certain matters in conflict with his own financial interests. Such is the publication named above. It evidently makes no difference to E. Merck whether the drugs upon which he reports are the products of his own laboratories or those of his competitors. His statements in either instance are sincere and reliable, more minutely considered each article is more or less adapted to practical uses. The glycerophosphates, for instance, are so considered as to renew, to some extent, our lost faith in the agency of phosphates in metabolism. He quotes favorable opinions of the glycerophospates expressed by various eminent observers; also prescriptions by Starr and by Kahane. His own prescription for preparing the drug for hypodermic solution is as follows:

℞ Solid Glycerophosphate 10 grammes (15 grains)
Sodii Chlor. ..... 0.03 grammes (½ grain)
Aq. distill. ..... 5.0 grammes (85 min.)

To be sterilized. For subcutaneous (intramuscular) injection, 1c.c. (17 min.) to be given once or twice daily.

The foregoing is but a sample of the character of the book. The only unfavorable criticism possible is of its paper binding. The book is not for sale. It is free for the asking as long as the edition lasts. Address E. Merck, Pharmaceutical Chemist, New York.

HOME NURSE'S HANDBOOK OF PRACTICAL NURSING.

A Manual for use in Home Nursing Classes, in Young Women's Christian Associations, in Schools for Girls and Young Women, and a Working Text-Book for Mothers, "Practical" Nurses, Trained Attendants, and all who have the responsibility of the home care of the sick. By Charlotte A. Aikens, Author of "Hospital Management," "Hospital Training-School Methods," "Primary Studies for Nurses," "Clinical Studies for Nurses" 12mo of 276 pages, Illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, $1.50 net.

The voluminous title of this book, quoted above, is sufficiently expressive to give our readers an idea of its character. Suffice it to say that the text confirms the title. The 276 pages of the book are filled with solid and valuable information, and the illustrations and charts are first-class.

Those interested in nursing cannot do better than consult this valuable little book.

CASE HISTORIES IN NEUROLOGY.

A Selection of Histories Setting Forth the Diagnosis, Treatment, and Post-Mortem Findings in Nervous Disease. By E. W. Taylor, A.M., M.D., Instructor in Neurology, Harvard Medical School, etc. W. M. Leonard, Publisher, Boston.

This book frankly deals with "the more frequent disorders of the nervous system," giving in logical order their symptomatology, diagnosis, treatment and pathological findings. Definite disease processes are carefully studied by means of selected, illustrative cases. Particular attention is paid to differential diagnosis. For convenience cases are arranged as peripheral, spinal cord, brain diseases, those of uncertain anatomical origin, and finally, the neuroses, or disorders of function. Though nothing is said, on the title-page, of illustrations, yet there are numerous schematic drawings illuminating in effect.

Those relating to the spinal cord are especially interesting. Any physician, student or nurse who, for any reason, desires to be unusually well posted in derangements of the nervous system will make a paying investment in buying this commonsense yet scientific production.

TEXT-BOOK ON THE PATHOGENIC BACTERIA AND PROTOZOA.

Seventh Edition, Thoroughly Revised. For Students of Medicine and Physicians. By Joseph McFarland, M.D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College, Philadelphia. Octavo of 878 pages, 293 illustrations, a number of them in colors. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, $3.50 net.

In no other department of medical study have the advancing steps been more numerous and rapid than in microbiology. During almost a generation the successive text-books on the subject written by Dr. Joseph McFarland have occupied an authoritative position, until this, the seventh edition, has already taken its place as the accepted authority in a large number of our foremost institutions. The book

is finely constructed, printed on good, substantial paper, bound in strong cloth, with gilt lettering. Through its 878 pages are distributed nearly 300 illustrations, a number of them in colors, all of an intensely practical character free from any attempt at display. It contains thirty-seven chapters, a bibliographic index and an alphabetical index, placing the whole work in the hands of readers in a convenient manner.

Any intelligent student with the preliminary education requisite for the successful study of medicine, can take this book and, by persistent study of its contents, make himself so thoroughly acquainted with the pathogenic bacteria and the methods of studying them that his microscope, test tubes and culture plates will speak to him in a language as clear and intelligible as his mother tongue.

The work deserves and will receive a cordial welcome.

THE COLLECTED WORKS OF CHRISTIAN FENGER, M.D.

Edited by Ludvig Hektoen, M.D., Professor of Pathology at Rush Medical College. Two octavo volumes averaging 525 pages each, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Per set: Cloth, $15.00 net; Half Morocco, $18.00 net.

This book is, to a certain extent, a memorial of the great surgeon whose name it bears, and his work. With the exception of a few minor articles and discussions it contains everything he ever published. The lectures are models of logical thinking and clear, precise expression. His themes are such as his wide range of surgical experiences would suggest. Want of space prevents the reviewer from quoting from any of them, but the papers on "cancer of the stomach" deserve special mention.

The engravings, however, are not of a class worthy to illustrate such an ambitious work, though they are clear and sharply defined, and efficient for practical purposes.

The book is published under the auspices of the Fenger Medical Association, which was organized at the suggestion of the Chicago Medical Society.

Such an unusual honor demonstrates the worth of the recipient. His thousands of pupils will be grateful for this opportunity to refresh their memories on his fine instructions. An excellent engraving of Dr. Fenger forms a suitable frontispiece.

A TEXT BOOK OF PATHOLOGY.

For Students of Medicine. By J. George Adami, M. A., M.D., F. R. S., and John McCrae, M.D., M. R. C. P. (London) Illustrated with 304 engravings and 11 colored plates Lea and Febiger, Philadelphia and New York.

This book of over 750 pages contains the salient features of the larger work by the same author, but with very little repetition. The general plan is the same, with some abbreviations and some additions. Not many of the illustrations in the larger work are used in this, but there are some 200 not before presented.

The 25 pages devoted to "Inflammation" alone convey an important phase of education. Altogether this book is better calculated to meet the requirements of the average student of medicine than a larger work would be. Concerning the excellence of its teaching and the perfection of its literary style there can be no question. It is sure to become one of those text books that are universally found in class rooms of medical colleges all over the English-speaking world. Others may be "just as good," none can be better.

ONE HUNDRED SURGICAL PROBLEMS.

The Experience of Daily Practice Dissected and Explained. By James G. Mulford, M.D., Instructor in Surgery, Harvard Medical School, etc. Octavo 354 pages. Price, $3.00. W. M. Leonard, Boston, Publisher.

This book presents one hundred selected cases, well classified in groups to show the phases of each subject, with statement of symptoms and thorough discussion, leading to diagnosis, treatment and results.

Of the value of this kind of book there is no question. As the Preface states, "The method in proper hands is luminous and the lessons instantly comprehensible." In this instance the method is certainly "in proper hands."

Certain groups of cases, as those of the stomach and duodenum, Graves' disease, digestive disorders are worthy special mention. In the last named series are ten full-page X-ray plates showing ptosis of the large intestine. These are equally valuable to the internist and the surgeon, and the publishers claim that they are superior to any work published up to the present in this field.

Each case history has been thoughtfully considered and well written—in accord with a style which Dr. Mulford has made his own. The book comprises a valuable post-graduate course in surgery presented in most interesting form.

MODERN METHODS IN NURSING.

By Georgiana J. Sanders, formerly Superintendent of Nurses at the Massachusetts General Hospital, Boston. 12 mo. of 881 pages, with 228 illustrations. Philadelphia and London: W. B. Saunders Co., 1912. Cloth, $2.50 net.

This book of 881 closely printed pages contains the elements of a liberal education in the art of nursing. The reviewer cannot recall another work on the subject that is more satisfying and complete. Indeed, it goes into some matters that are not always treated of in a book on nursing, as, for example, the significance of a great many common symptoms, the physical signs, examination of special organs and of the sputum, urine and blood. Splints and bandages are explained and illustrated and the nurse is shown how to tie "granny," "reefer" and "surgeon's" knots.

The important art of digital compression of superficial arteries, as well as of the femoral, is clearly shown.

In a word, the work is more than complete. It should be a text-book in every training school for nurses.

SHERMAN'S BACTERINS

39 DIFFERENT PREPARATIONS
Put up in 1 c. c. glass sealed ampules
Package, 6 ampules, any variety, $1.50

Dr. Sherman's New Book
Devoted to the practical application of Bacterins. Cloth bound, 336 pages.

Price $1.50

The Bacterial Therapist
A 24-page monthly journal devoted exclusively to Vaccine Therapy. Free for one year upon request.

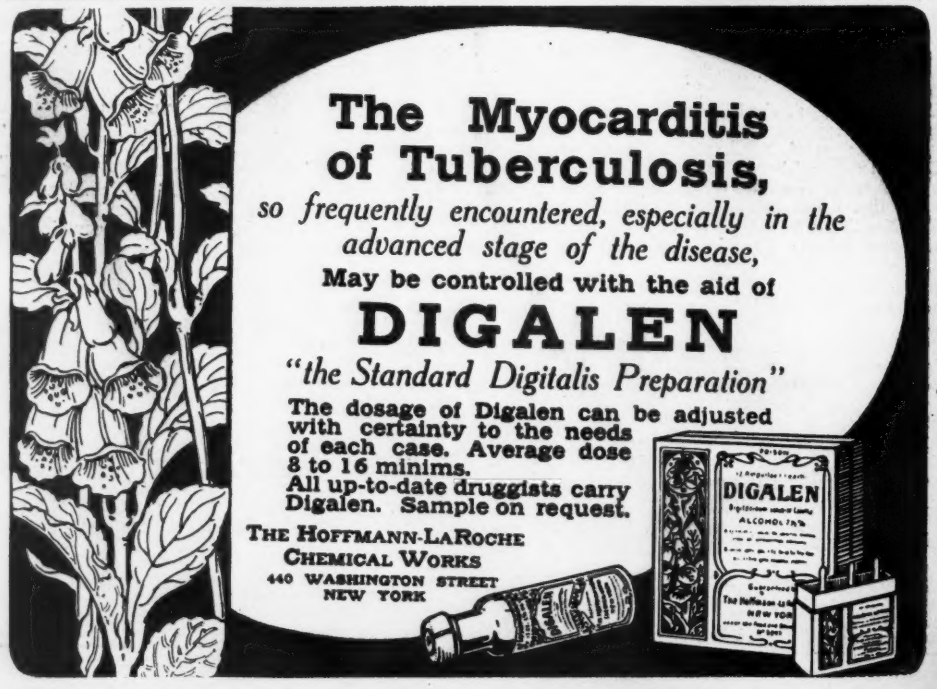
The Latest Development in Bulk Package
18 cc. for
$3.00

Patent applied for

G. H. SHERMAN, M.D.
Write for Literature. **DETROIT, M CH**
U. S. License No. 30

Neosalvarsan

NOVOCAIN
AND
L-SUPRARENIN
SYNTHETIC Hypodermic Tablets
SEVEN TIMES LESS TOXIC THAN COCAIN
An Ideal Local Anesthetic for
Minor and Major Surgery
MELUBRIN
A Specific in Acute Articular
Rheumatism and Allied Conditions
Salvarsan
FARBWERKE HOECHST COMPANY
Pharmaceutical Dept
Successors to
Victor Koechl & Co.
H. A. METZ
President
New York


The Myocarditis of Tuberculosis,
so frequently encountered, especially in the advanced stage of the disease,
May be controlled with the aid of
DIGALEN
"the Standard Digitalis Preparation"
The dosage of Digalen can be adjusted with certainty to the needs of each case. Average dose 8 to 16 minims.
All up-to-date druggists carry Digalen. Sample on request.
THE HOFFMANN-LAROCHE CHEMICAL WORKS
440 WASHINGTON STREET
NEW YORK
DIGALEN
ALCOHOL 7%

LABORATORY DIAGNOSIS

This Laboratory is fully equipped to perform all types of research, microscopic and analytical work for Physicians. Wassermann tests. Complement-fixation test for gonorrhoea. Auto-vaccines prepared. Stock vaccines furnished. All investigations made by laboratory and clinical experts. Fee tables on application.

Wassermann Test for Syphilis	$10 00	Complement-Fixation Test for Gonorrhoea	$10 00
Urinalysis, chemical and microscopical	1 50	Sputum and Smears	1 00
Widal Test for Typhoid	1 00	Blood Count and hemoglobin	3 00
Tissues, pathological examination	5 00	Differential Count or Malaria	1 00
Stock Vaccines, per dozen	5 00	Autogenous Vaccines	10 00

In response to the frequent requests of the profession, we have established a separate department of instruction in all branches of Clinical Diagnosis, embracing Clinical Chemistry, Pathology and Bacteriology. Write us for information.

CHICAGO LABORATORY

8 NORTH STATE ST. CHICAGO TEL. RANDOLPH 3610

RALPH W. WEBSTER, M.D., Ph.D., Director Chemical Department; THOMAS L. DAGG, M.D., Director Pathological Department; C. CHURCHILL CROY, M.D., Director Bacteriological Department; ALYS B. CROY, M.D., Assistant.

"Kelene"

For Local Anaesthesia. Also an Adjuvant to Ether in General Anaesthesia

Avoids use of Hypodermic Needle. No dangerous After Effects. No Disturbance to System from Injection of Drugs.

FRIES BROS., Manufacturers, 92 Reade St., N. Y.

WHAT IS IT?

EVERY DOCTOR SHOULD KNOW. ASK THE MANUFACTURERS.

SOLE DISTRIBUTORS FOR THE UNITED STATES

MERCK & CO. New York Rahway St. Louis

50% Better

Prevention Defense Indemnity

1 All claims or suits for alleged civil malpractice, error or mistake, for which our contract holder,

2 Or his estate is sued, whether the act or omission was his own

3 Or that of any other person (not necessarily an assistant or agent)

4 All such claims arising in suits involving the collection of professional fees

5 All claims arising in autopsies, inquests and in the prescribing and handling of drugs and medicines.

6 Defense through the court of last resort and until all legal remedies are exhausted

7 Without limit as to amount expended.

8 You have a voice in the selection of local counsel.

9 If we lose, we pay to amount specified, in addition to the unlimited defense.

10 The only contract containing all the above features and which is protection per se. *A sample upon request.*

The MEDICAL PROTECTIVE CO.
of **Fort Wayne, Indiana**
Professional Protection, Exclusively

PEARSON HOME

FOR THE TREATMENT OF

Drug Addictions

Avoidance of shock and suffering enables us to treat safely and successfully those extreme cases of morphinism that from long continued heavy doses are in poor physical condition.

BONNER ROAD, BALTIMORE, MD.

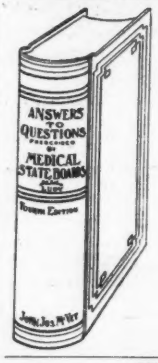
Have You Joined the Southern Medical Association Yet?

You will eventually, why not now?

If you are a member, have you secured a new one this new year?

Our membership doubled last year. Why not treble it this year?

With your assistance we can do it.



ANSWERS TO QUESTIONS
PRESCRIBED BY
MEDICAL STATE BOARDS
By
Robert B. Ludy, M.D.

Fourth edition, 8vo, 776 pages; price, $3.75 net, prepaid.

Only original state board book, not an imitator. Has real questions asked, with accurate answers by specialists.

JNO. JOS. McVEY, Publisher.
1229 Arch Street,
Philadelphia, Pa.

EVERY COAT WE TURN OUT A WINNER.

Physicians' coats for professional use. Made of white or sixty other shades of washable materials. Fast colors. Thoroughly shrunk before making. Made to measure. We pay delivery charges to all parts of the world. Our "Swatch Card," showing materials, styles and prices, free upon request. Dressing Gowns, Smoking Jackets, Bath Robes and Hospital Uniforms a Specialty.

WEISSFELD BROS.
Manufacturers of PHYSICIANS' COATS,
"The kind they all admire."
115K Nassau St., New York.

These trade-mark crisscross lines on every package

SPECIAL DIETETIC FOOD
Flour for cases of
KIDNEY AND LIVER TROUBLES
REQUIRING RATHER STRICT DIET

Unlike other goods. Ask your physician.
Leading grocers. For book or sample, write
FARWELL & RHINES, Watertown, N. Y., U. S. A.

Drs. Kohlmann & Shlenker

Beg to announce that beginning November the first they will offer a course in

Clinical Gynecology and Cystoscopy

For particulars address

Care TOURO INFIRMARY, New Orleans, La.

QUICK ACTION SUGGESTIONS

BURNS SCALDS

Apply Chinosol solution 1:1000---gauze dressing thoroughly soaked---keep wet---Promptly allays the pain---promotes healing---avoids pus---seldom any resultant scar. Worth knowing---Try it.

PTOMAINE POISONING

Tainted oysters or other food? Agonizing gripes? Dissolve one tablet Chinosol in tumbler hot water---Drink entire contents---Expect relief in a few minutes---Pain often entirely gone in ten minutes---Also worth knowing---Test it and see.

VAGINAL ANTISEPSIS (COMPLETE)

"Aseptikons" (formerly known as Chinosol Suppositories) possess greater antiseptic strength than bi-chloride, but non-poisonous, non-irritating, no injury to membranes. Indicated in cervicitis, leucorrhea, specific and non-specific vulvo-vaginitis, in all cases where complete vaginal antisepsis is desired.

CHINOSOL CO., PARMELE PHARMACAL CO., Selling Agents, 54 South St., N.Y

WOMAN'S BELT, SIDE VIEW

The "Storm Binder" Abdominal Supporter

PATENTED

ADAPTED TO USE OF MEN, WOMEN AND CHILDREN

No whalebones, no rubber elastic—washable as underwear. Suitable for non-operative and post-operative cases. Comfortable for sofa and bed wear and athletic exercise. The invention which took the prize offered by the Managers of the Woman's Hospital of Philadelphia. A Supporter in harmony with modern surgery that supports with comfort. Of great value for visceroptosis. Illustrated folder and partial list of physicians using "Storm" Binder sent on request. Mail Orders filled within 24 hours on receipt of price.

KATHERINE L. STORM, M.D.
1541 Diamond Street, Philadelphia

PRIDE OF THE KITCHEN SCOURING SOAP

Scouring and Washing Powders

have been for many years
used by the U. S. Government Officials

These superb articles have won their way to favor

in Hospitals and Public Buildings throughout the United States. Theirs is a contest of MERIT. The popularity of the

Pride of the Kitchen Scouring Soap and Powders

is constantly increasing. They are second to NONE. We want Hospitals and Public Buildings to use them. Write to us for prices, samples, etc. We guarantee satisfaction.

THE PRIDE OF THE KITCHEN COMPANY 386-390 B SMITH STREET BROOKLYN, N. Y.

Welch's
Grape Juice

is delightful and beneficial. The hospital patient who craves something and does not know what, finds grateful satisfaction in Welch's Grape Juice.

It has the rare quality also of possessing a lasting charm. The patient does not grow weary of it or learn, because of its beneficial effects, to regard it as something that is to be taken as a duty. It is always a treat.

Because we pay an extra price for them, we get the choicest Concord grapes, and these only are used in the production of Welch's Grape Juice.

Our Booklet, "The Food Value of the Grape," will be sent upon application. A request for our book of recipes for drinks and dishes that may be served to the sick will also receive prompt attention.

4-oz. bottle mailed, 6c. Sample pint by express, prepaid, 25c.

Welch's is sold by all Druggists.

The Welch Grape Juice Company, Westfield, N. Y.

MILK

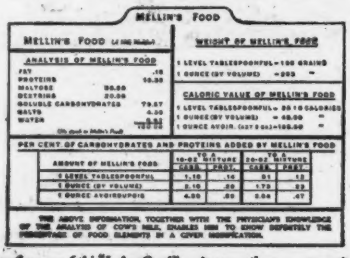
is the ideal basis of an infant's diet.
that is fresh and clean.
that is properly modified.

The modification of cow's milk is necessary that the diet may be balanced to meet the various conditions that are presented to the physician and to insure progressive development of ill-nourished and under-developed infants, as well as normal babies.

In

MELLIN'S FOOD

the physician will find a most efficient modifier of milk and one that is rational and simple as well as consistent with the evidence accumulated since the beginning of the study of infant feeding.



MELLIN'S FOOD

MELLIN'S FOOD (A DRY MALT EXTRACT)

ANALYSIS OF MELLIN'S FOOD

FAT	.10
PROTEINS	10.30
MALTOSE	58.00
DEXTRINS	20.00
SOLUBLE CARBOHYDRATES	78.57
SALTS	4.30
WATER	6.83
	100.00

WEIGHT OF MELLIN'S FOOD

1 LEVEL TABLESPOONFUL = 100 GRAINS
1 OUNCE (BY VOLUME) = 900 "

CALORIC VALUE OF MELLIN'S FOOD

1 LEVEL TABLESPOONFUL = 30.10 CALORIES
1 OUNCE (BY VOLUME) = 48.00 "
1 OUNCE AVOIR. (437.5 GRS.) = 105.00 "

PER CENT OF CARBOHYDRATES AND PROTEINS ADDED BY MELLIN'S FOOD

AMOUNT OF MELLIN'S FOOD	VOL. 10-OZ. MIXTURE CARB.	VOL. 10-OZ. MIXTURE PROT.	VOL. 20-OZ. MIXTURE CARB.	VOL. 20-OZ. MIXTURE PROT.
1 LEVEL TABLESPOONFUL	1.10	.10	.51	.12
1 OUNCE (BY VOLUME)	5.10	.50	1.73	.53
1 OUNCE AVOIRDUPOIS	4.50	.50	2.04	.47

THE ABOVE INFORMATION, TOGETHER WITH THE PHYSICIAN'S KNOWLEDGE OF THE ANALYSIS OF COW'S MILK, ENABLES HIM TO KNOW DEFINITELY THE PERCENTAGE OF FOOD ELEMENTS IN A GIVEN MODIFICATION.

A copy of this "Index Card" sent promptly upon request

"Maltose in Infant Feeding"
"Formulas for Infant Feeding"
"The Care and Feeding of Infants"

These publications make the Mellin's Food Method of Milk Modification clear and practical for every physician.

Copies sent upon request.

Mellin's Food Company - - Boston, Mass.

1

X

FLUIDEXTRACT ERGOT P-M CO.

U. S. P. VIII FORMULA

Has been sold under a dated label for two years past.

Medical literature contains many reports showing that liquid preparations of Ergot change and lose their efficiency with age and investigators unite in asking that the date of manufacture be given on the labels of these articles.

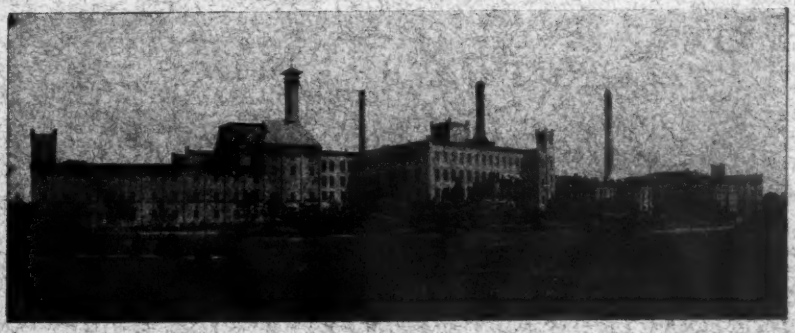
Consider the importance of having this drug right *when sold*—how much more necessary it is that it be right *when used!* P-M Co. dated label protects our customers.

This dated label is evidence of our desire to co-operate with the medical profession in securing drugs that are not only pure but also at the highest point of efficiency.

FLUIDEXTRACT ERGOT P-M Co. is supplied in

2-oz. bottles. 4-oz. bottles. 8-oz. bottles. Pint bottles.

PITMAN-MYERS CO., Chemists, 111 No. Capitol Avenue, Indianapolis, Ind.



The Largest, Best Equipped and Most Sanitary Plant of Its Kind in the World.

The Home of the Original and Only Genuine

HORLICK'S MALTED MILK

Samples sent on request. **RACINE, WIS., U. S. A.**

Hypodermatic Tablets

that may be depended upon in every emergency.

WHEN a physician administers a preparation hypodermatically he wants prompt, precise action. Dependence in such an emergency is upon a single little tablet. And that tablet—will it justify the faith? Is it *medicinally active?* Is it *full strength?* Is it *soluble?* These become living questions.

The practitioner who uses Parke, Davis & Co.'s hypodermatic tablets may do so with full assurance of their reliability.

Our hypodermatic tablets are of guaranteed potency. Every drug entering into their composition is rigidly tested, and the active component is present in the precise amount stated on the label.

Our hypodermatic tablets are of uniform strength. The content of each tablet is accurately determined, the medicament being uniformly subdivided by our method. The dose is invariable.

Our hypodermatic tablets are freely soluble. They dissolve completely in lukewarm water in a very few seconds. *Test them by the watch!*

Our hypodermatic tablets are stable. They are molded by a process that insures firmness. They do not crumble in shipping or handling.

Tubes of 25—not 20.

Parke, Davis & Co.'s hypodermatic tablets are supplied in tubes of 25. Certain competing tablets are marketed in tubes of 20. **Specify "Parke, Davis & Co." on your orders. Get 25 tablets to a tube, not 20.**

PARKE, DAVIS & CO.

Home Offices and Laboratories, Detroit, Mich.

V

M

A

F

(3

XU